May 14, 1956

How KCT Breaks a Bottleneck . . . p. 42

RAILWAY AGE

WORKBOOK OF THE RAILWAYS

THE INDUSTRY'S ONLY WEEKLY NEWSMAGAZINE

How *could* this guard rail overturn?

As the wheels roll smoothly into the flangeway, they actually anchor the Bethlehem Hook Flange Guard Rail in place. The trick is in the special "hooked" flange which lies beneath the running rail, where the full wheel load of every truck pins it down. With all that weight to keep it right where it belongs, how *could* this guard rail overturn?

It just can't. Nor can it spread. Even under sharp side thrust, the Hook Flange Guard Rail steadfastly holds the line because of the double-shouldered tie plates which engage the bases of both running rail and guard. Thick, heavily-welded side braces further reinforce the guard rail where help is needed most: opposite the frog point.

The Hook Flange Guard Rail is about as easy to install as a guard rail could be. No holes to drill, no blocks or clamps to fit in place. Just a sturdy, one-piece length, bolted through predrilled holes to the special tie-plates described above. And that's it!

So far as we know, the Bethlehem Hook Flange Guard Rail has never broken under traffic. That should stamp this reliable safeguard as the safest of its kind ever made. One of our representatives will gladly give you the full story, and set up a visit to a nearby installation if you wish. You can make the necessary arrangements through the nearest Bethlehem district sales office.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM HOOK FLANGE GUARD RAIL

BETHLEHEM STEEL

RAILWAY AGE

EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y., AND 79 WEST MONROE STREET, CHICAGO 3, ILL.

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SUBSCRIPTION TO RAILROAD EMPLOYEES ONLY IN U. S., U. S. POSSESSIONS, CANADA AND MEXICO, $4 ONE YEAR, $6 TWO YEARS, PAYABLE IN ADVANCE AND POSTAGE FREE. TO RAILROAD EMPLOYEES ELSEWHERE IN THE WESTERN HEMISPHERE, $10 A YEAR; IN OTHER COUNTRIES, $15 A YEAR—TWO-YEAR SUBSCRIPTIONS DOUBLE ONE-YEAR RATE. SINGLE COPIES 50c. EXCEPT SPECIAL ISSUES $1. CONCERNING SUBSCRIPTIONS WRITE R. C. VAN NESS, CIRCULATION DIRECTOR, 30 CHURCH ST., NEW YORK 7.

Workbook of the Railways

Vol. 140, No. 20
May 14, 1956

CONTENTS and

Week at a Glance

Narrow planks of high strength low alloy steel containing nickel take concentrated wheel loads of lift trucks and heavy machinery. Plastic filler in tight-grip nailing grooves between each plank allows any conventional bulkhead arrangement and lading blocking. The filler also permits carrying fine bulk loads of all kinds. Design and construction developed by Pullman-Standard Car Mfg. Co., Chicago 3, Illinois.

Nailable steel flooring in freight cars! Superior Performance with Nickel Alloy Steel

This flooring stays in class A condition and keeps cars in revenue service. It cuts maintenance expense as well as loss and damage hazards.

These advantages stem from a Pullman-Standard development that makes new use of high strength low alloy steels containing nickel.

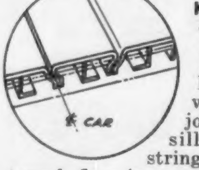
Cuts weight . . . resists corrosion

Lightweight sections of these steels give users the same strength and durability as heavier sections that would be necessary with plain carbon structural steel. What's more, these steels containing nickel offer 4 to 6 times greater resistance to atmospheric corrosion, and as a result, they retain much of their original strength over years of use.

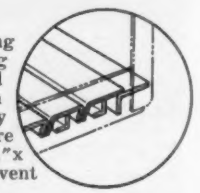
In addition, by using the high tensile nickel steels, the new flooring provides superior resistance to impact, battering and abrasion. These steels respond readily to the cold forming and welding operations used during fabrication.

Sold under various trade-names by many steel companies, high strength low alloy steels containing nickel along with other alloying elements, offer a multitude of advantages. Learn how they can help you cut deadweight, add load capacity and prolong equipment life.

Send for a copy of *"Nickel-Copper High Strength Low Alloy Steels."* It's yours for the asking. **Write for it now.**



Key plank in center of flooring makes joints symmetrical on both ends of car. Each plank is welded to those adjoining, and to side sills, center sill and stringers. Thus made integral, floor increases over-all strength of car.



End of floor. Planking provides 99 nailing grooves in standard 50'-6" boxcar. Each plank is individually reinforced the entire length with 2"x1½"x 3/16" angle to prevent dishing.

THE INTERNATIONAL NICKEL COMPANY, INC. 67 Wall Street New York 5, N. Y.

Current Statistics

Operating revenues, three months	
1956	$2,535,561,742
1955	2,307,923,152
Operating expenses, three months	
1956	$1,980,694,846
1955	1,767,777,513
Taxes, three months	
1956	$269,326,709
1955	242,996,101
Net railway operating income, three months	
1956	$218,900,246
1955	235,067,723
Net income, estimated, three months	
1956	$163,000,000
1955	176,000,000
Average price 20 railroad stocks	
May 8, 1956	111.12
May 10, 1955	96.87
Carloadings revenue freight	
Seventeen weeks, 1956	11,949,486
Seventeen weeks, 1955	11,073,563
Average daily freight car surplus	
Wk. ended May 5, 1956	4,891
Wk. ended May 7, 1955	15,726
Average daily freight car shortage	
Wk. ended May 5, 1956	6,994
Wk. ended May 7, 1955	5,010
Freight cars on order	
April 1, 1956	137,070
April 1, 1955	17,974
Freight cars delivered	
Three months, 1956	15,029
Three months, 1955	7,263
Average number of railroad employees	
Mid-March 1956	1,041,159
Mid-March 1955	1,007,648

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RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

•

Departments

Week at a Glance CONTINUED

a conventional truck tractor, and on the rails in trains of as many as 150 units. . . . p.47

Depots that travel by rail . . .

. . . are the Rock Island's answer to the need for low-cost "prebuilt" structures to replace obsolete small-town station buildings. . . . p.50

Rate competition in transportation . . .

. . . ought to be allowed by legislation, says the AAR Freight Station Section in a resolution to go to Congress. . . . p.52

COMING: Next Week . . .

. . . The annual Railway Age Passenger Progress Issue, rounding up all that's new about service and equipment, and taking another look at various angles of the passenger "deficit" situation.

BRIEFS

No thought of merger . . .

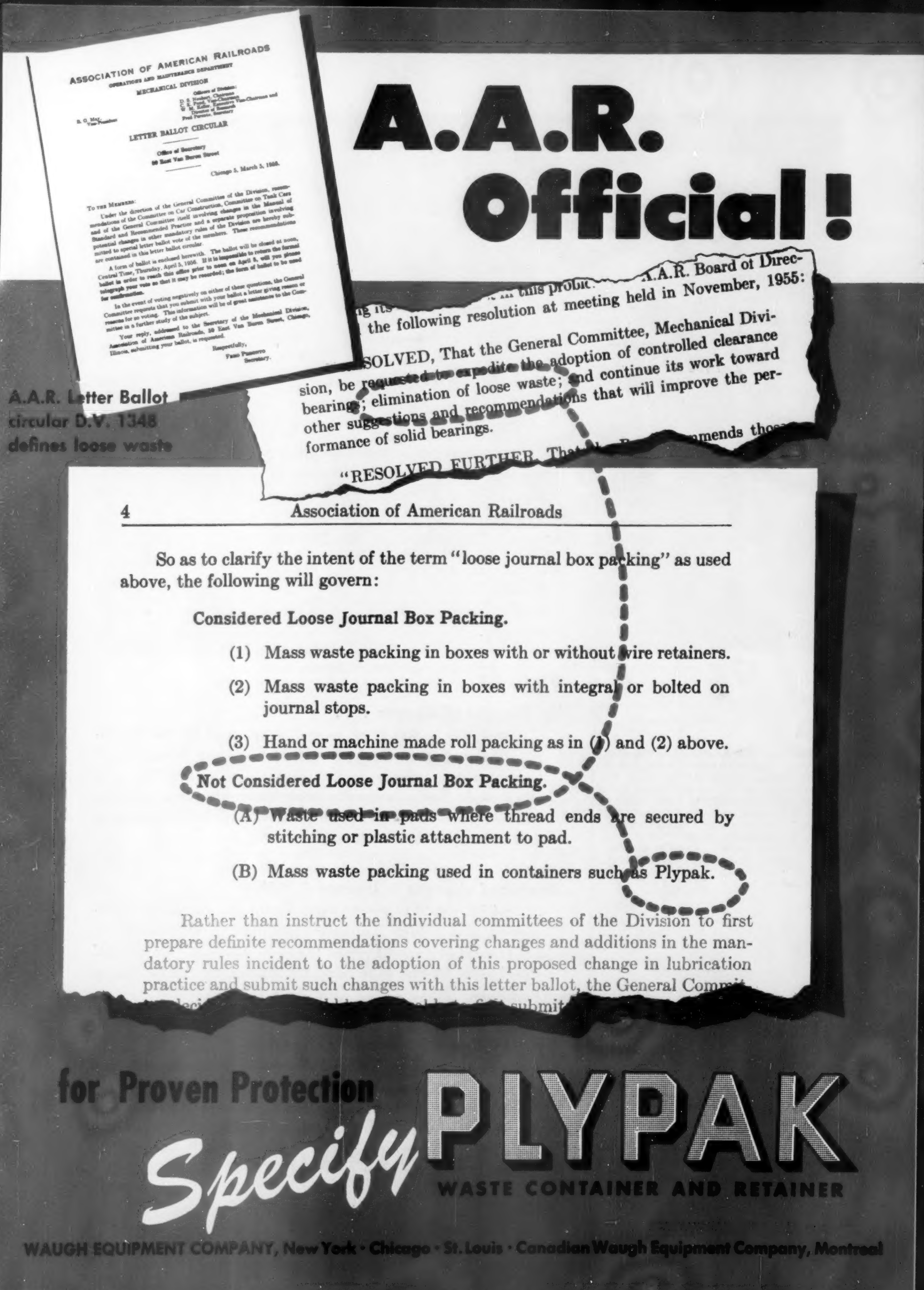
. . . with the Nickel Plate is now entertained by the Lackawanna management. Instead, opportunities are being sought to achieve economies by logical coordination of facilities with other roads. Lackawanna President Shoemaker, incidentally, has just been elected president of the Chamber of Commerce of the State of New York.

Proposed changes in transport policy . . .

. . . which would place greater reliance on competitive rate-making and reduce economic regulation of transportation, are favored in a recent report to the New England Governors' Conference by the governors' Committee on Public Transportation.

Seaway doesn't worry Fairweather . . .

. . . The Canadian National's vice-president, research and development, asserts this summertime ship channel will mean more business for Canada's railroads, because it will help in the growth of the Canadian economy, making more prosperous nation. "Where prosperity is the CNR will prosper," he believes.



ASSOCIATION OF AMERICAN RAILROADS
OPERATIONS AND MAINTENANCE DEPARTMENT
MECHANICAL DIVISION
LETTER BALLOT CIRCULAR
Office of Secretary
59 East Van Buren Street
Chicago 5, March 5, 1956.
To the Members:
Under the direction of the General Committee of the Division, recommendations of the Committee on Car Construction, Committee on Tank Cars and of the General Committee itself involving changes in the Manual of Standard and Recommended Practice and a separate proposition involving potential changes in other mandatory rules of the Division are hereby submitted to special letter ballot vote of the members. These recommendations are contained in this letter ballot circular.
A form of ballot is enclosed herewith. The ballot will be closed at noon, Central Time, Thursday, April 5, 1956. If it is impossible to return the formal ballot in order to reach this office prior to noon on April 5, will you please telegraph your vote so that it may be recorded; the form of ballot to be used for confirmation.
In the event of voting negatively on either of these questions, the General Committee requests that you submit with your ballot a letter giving reason or reasons for so voting. This information will be of great assistance to the Committee in a further study of the subject.
Your reply, addressed to the Secretary of the Mechanical Division, Association of American Railroads, 59 East Van Buren Street, Chicago, Illinois, submitting your ballot, is requested.
Respectfully,
Secretary.
A.A.R. Letter Ballot circular D.V. 1348 defines loose waste
A.A.R. Official!
A.A.R. Board of Direc-
the following resolution at meeting held in November, 1955:
SOLVED, That the General Committee, Mechanical Divi-
sion, be requested to expedite the adoption of controlled clearance
bearings; elimination of loose waste; and continue its work toward
other suggestions and recommendations that will improve the per-
formance of solid bearings.
"RESOLVED FURTHER, That
4
Association of American Railroads
So as to clarify the intent of the term "loose journal box packing" as used above, the following will govern:
Considered Loose Journal Box Packing.
(1) Mass waste packing in boxes with or without wire retainers.
(2) Mass waste packing in boxes with integral or bolted on journal stops.
(3) Hand or machine made roll packing as in (1) and (2) above.
Not Considered Loose Journal Box Packing.
(A) Waste used in pads where thread ends are secured by stitching or plastic attachment to pad.
(B) Mass waste packing used in containers such as Plypak.
Rather than instruct the individual committees of the Division to first prepare definite recommendations covering changes and additions in the mandatory rules incident to the adoption of this proposed change in lubrication practice and submit such changes with this letter ballot, the General Commit-
for Proven Protection
Specify PLYPAK
WASTE CONTAINER AND RETAINER
WAUGH EQUIPMENT COMPANY, New York · Chicago · St. Louis · Canadian Waugh Equipment Company, Montreal

RAILWAY AGE
Workbook of the Railways

Railroad Automation Is Growing

Seminar group told new techniques promise railroads "gigantic" tangible results and "even more absorbing" intangible benefits

Automation, which has cut costs, provided better management control and increased production in many industries, is rolling along at a fast clip on the nation's railroads.

The trend shows up in modern hump yards, in accounting departments, signaling and a host of other areas. The industry can already point to many "automated" operations; today the outlook is for more.

This picture showed up during a two-day seminar on railroad automation, held at the University of Michigan, recently. The session was co-sponsored by the university's Transportation Institute and the Michigan Railroad Association.

Gigantic Results—T. J. Deegan, Jr., vice-president—staff of the New York Central, told the seminar group that automation promises railroads "gigantic" tangible results and "even more absorbing" intangible benefits. He defined automation as "doing automatically what we used to do manually and mentally."

"We look forward to an almost immeasurable improvement in railroad public relations and public acceptance," Mr. Deegain said. "Of course, I realize complete public acceptance will not come overnight. But the potential effects of our rejoining the ranks of 'progressive industry' could be beyond description."

Mr. Deegan pointed out that railroad operations are basically of a mass production character geared to assembly-line high volume. This characteristic, together with the industry's size and complexity, is what makes automation so attractive to railroaders, he said.

"At present the public looks upon us as a moribund, decadent industry, partly because government has done so much to make us so, and, in turn, legislators and regulators treat us as such because they believe public opinion supports them," Mr. Deegan said. He went on to add, however, that some of the public, especially the investing public, is beginning to sense a new spirit in the railroad industry. This builds confidence, he said, that the industry will be able to get the $20 billion it needs for automation and other modernization.

Visible Progress—This is not to say that all automation is still in the future. Three panel sessions at the Michigan seminar explored what is already being accomplished—and the scorecard is impressive.

George W. Baughman, vice-president of the Union Switch & Signal Division of Westinghouse Air Brake Company, described how modern methods of train operation are combining automatic features to increase safety and economy. These systems include such things as the automatic air brake, wheel-slip detection devices, automatic block signals, interlocking plants, cab signaling and automatic speed control, and centralized traffic control.

Mr. Baughman also mentioned the use of "Train Identification" in rapid transit signaling.

"By using an identifying piece of equipment on the front end of each train and providing means so that this identification is conveyed to the

Railway Age "Capsuled" for Readers of 2000 A.D.

One feature of the recent "railroad week" at Huntington, W. Va., was burial of a time capsule to be opened in the year 2000. Letters from presidents of three railroads serving the city, and a recent issue of Railway Age were among the mementos sealed in container shown being lowered into ground by (left to right), J. B. Herring, A. W. Johnston and M. B. Young, representing the Chesapeake & Ohio, the Baltimore & Ohio and the Norfolk & Western, respectively. "Miss Huntington Railroads," Carole Smole, stands by with plaque which will mark the burial spot.

wayside system, it is possible for the train to select its own route without the need for the dispatcher to move any levers on his control machine," Mr. Baughman explained.

Discussing the role of modern classification yards, Mr. Baughman called such yards "one of the nearest approaches to complete automation on a large scale that is used in train operation today." Looking to the future, he said remote control of locomotives in these big yards "appears ready for practical consideration at the present time."

Elsewhere in the seminar, Philip C. Watt of the Transportation Department of International Business Machines, said modern computers are eliminating the "time lag" in providing management with information for sound decision making.

"The way railroads use these machines shows how aggressive management today really is," Mr. Watt said. He labeled "communications" the biggest single item in the whole data-processing picture and predicted that computers, and the information they can provide, are going to find increasing use in railroad operations, providing, among other things, far better control over rolling stock.

Help Wanted—As the trend to automation picks up momentum, there is increasing pressure for trained personnel, not only to man the machines but, more important, to program the work they will do. As Mr. Watt pointed out, the machines don't think.

Dr. Cecil C. Craig, director of the University of Michigan's Statistical Laboratory, sees part of this training job as one of developing systems engineers—men skilled in all phases of "management science." Dr. Craig said universities are already moving into this kind of work, and 15 schools, including Michigan, now have large computers on the campus. By the end of 1956, the number of such schools is expected to double.

Electronic Hot Box Detector Ordered

Permanent installation of new device on the Rock Island follows more than one year of testing

Elecronic devices for detecting hot boxes on passing trains at speeds up to 60 mph are to be installed within a few weeks by the Rock Island at Mineral, Ill.

This permanent installation follows extensive tests made by the road for more than a year in cooperation with the Federal Telephone & Radio Co., suppliers of the new detector, which was developed by the Farnsworth Electronics Company. Both Federal and Farnsworth are divisions of International Telephone & Telegraph Corp.

Mineral is 30 miles east of the Rock Island's classification yard at Silvis, Ill., which, tests have shown, is sufficient distance for recordable heat to develop in bearings on eastbound trains.

Two Cameras—The detector consists of a camera that measures heat radiation from a journal—an installation includes two identical cameras, one on each side of the track, together with an evaluation unit.

The optical system in the camera focuses radiation from the journal box onto a heat-sensitive element, which consists of a thermistor bolometer of high speed response. In front of the thermistor element is an electrically operated shutter synchronized to the passage of journal boxes, so that the element is exposed to radiation for 2/1000 of a second, and only when a journal box is in front of the camera. The shutter is said to prevent false temperature readings, such as those from hot brake shoes. Included in the camera is a preamplifier which steps up the bolometer signal for transmission to the evaluation unit.

Main function of the evaluation unit is further amplification of the signal received from both cameras, and selection of pulses indicating abnormal box temperature. In addition, the unit contains the power supply for operation of bolometers, preamplifiers and shutters in both cameras. Selection of abnormal pulses is made by a pulse amplitude discriminator which "passes" pulses produced by the heat-sensitive element of the cameras only if they exceed a critical level.

Covers Wide Range—Depending on the intended application (hot box alarm or inspection instrument) the discrimination level is adjustable by simple setting of a calibrated adjustment knob for a wide range of journal box temperatures. The discriminator level can be adjusted between 20 deg C and 100 deg C above ambient. Maximum train speed, to detect hot boxes, has been set at 60 mph.

The Rock Island has not decided on the type of warning to be transmitted to the engineman. Operation of the detectors can be adjusted to provide information about either or both of two ranges, of temperature. In the first application, the instrument is adjusted to respond to dangerously high temperatures only. When so adjusted, circuits can be arranged to set a special wayside signal, ahead of the train, to display an aspect directing the engineman to stop the train.

In other applications, the instrument can be set to detect deviation of journal temperatures only slightly above normal. By means of a digital printer, the occurrence and location of such suspicious boxes could be communicated automatically to the next open office or scheduled stop, where inspections can be made.

Other Uses—A glance into the future indicates these detectors, installed extensively, could be used to assemble data that would assist railroads in developing a "pattern" of hot box occurrences, with respect to: (1) type of cars; (2) lading; (3) lubricants; (4) seasons of the year; (5) time of day; and (6) distance traveled from last yard.

Cost Factor in Rates Held Key to Progress

"Carrier initiative" in coming up with new services should be encouraged rather than stifled under transport regulation, Under Secretary of Commerce for Transportation L. S. Rothschild told the Newark, N.J., Traffic Club May 7.

For this reason, he said, pricing based on costs rather than rate-making under the "doctrine of 'competi-

(Continued on page 11)

RAILWAY MARKET OUTLOOK THIS WEEK

a RAILWAY AGE Workbook Page

Carloadings Down.—Loadings of revenue freight in the week ended May 5 totaled 770,558 cars, the Association of American Railroads announced on May 10. This was a decrease of 7,840 cars, or 1.0%, compared with the previous week; an increase of 33,654 cars, or 4.6%, compared with the corresponding week last year; and an increase of 122,604 cars, or 18.9%, compared with the equivalent 1954 week.

Loadings of revenue freight for the week ended April 28 totaled 778,398 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, April 28

District	1956	1955	1954
Eastern	129,403	124,330	110,811
Alleghany	157,607	146,878	117,705
Pocahontas	64,694	59,724	46,323
Southern	135,092	108,088	116,789
Northwestern	112,953	111,289	98,417
Central Western	121,179	116,562	103,899
Southwestern	57,480	59,029	53,982
Total Western Districts	291,602	286,880	256,298
Total All Roads	778,398	725,900	647,925
Commodities:			
Grain and grain products	49,861	48,789	47,049
Livestock	7,546	9,140	8,333
Coal	142,705	116,494	96,363
Coke	13,212	11,611	7,048
Forest Products	46,916	43,078	40,097
Ore	67,433	58,311	45,503
Merchandise l.c.l.	60,651	60,563	61,891
Miscellaneous	390,074	377,914	341,641
April 28	778,398	725,900	647,925
April 21	763,437	701,432	626,182
April 14	742,053	670,304	612,884
April 7	685,397	659,217	606,790
March 31	724,944	654,761	599,302
Cumulative total, 17 weeks	11,949,486	11,073,563	10,456,220

In Canada.—Carloadings for the seven-day period ended April 21 totaled 83,204 cars, compared with 79,142 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
April 21, 1956	83,204	34,159
April 21, 1955	70,297	31,105
Cumulative Totals:		
April 21, 1956	1,203,511	555,867
April 21, 1955	1,064,195	494,341

Purchases and Inventories

► *Two-Months' Purchases Up $100.5 Million.*—Purchases by domestic railroads of all types of materials during this year's first two months were almost $100.5 million above those in same 1955 period; following tables of purchases and inventories were prepared by Railway Age research department:

PURCHASES*	February 1956	Two Months 1956	Two Months 1955
	(000)	(000)	(000)
Equipment**	$ 50,238	$ 77,693	$ 62,554
Rail	9,004	18,621	13,817
Crossties	5,517	11,399	8,794
Other Material	108,410	213,020	133,362
Total from Manufacturers	$173,169	$320,733	$218,527
Fuel	35,856	73,971	75,697
Grand Total	$209,025	$394,704	$294,224

* Subject to revision.
** Amount placed on order.

INVENTORIES* †	Feb. 1, 1956	Feb. 1, 1955
	(000)	(000)
Rail	$ 51,444	$ 45,203
Crossties	91,815	109,763
Other Material	492,836	493,471
Scrap	19,965	18,297
Fuel	31,193	33,040
Total	$687,253	$699,774

* Subject to revision.
† All total inventory figures taken from ICC statement M-125 for month indicated.

New Equipment

► *CPR to Spend $1.5 Billion in Next 15 Years.*—Canadian Pacific plans for spending $100,000,000 in each of the next 15 years were revealed by N. R. Crump, CPR president, at road's recent annual shareholders' meeting; proposed expenditures were detailed like this: For track and auxiliary facilities, $600,000,000; 680 diesel units, $125,000,000; freight cars, $480,000,000; passenger cars, $45,000,000; hotel extensions, $30,000,000; ocean-going passenger vessel, larger than "Empress of Britain," $22,000,000; seven cargo vessels, $28,000,000; communications, $60,000,000; CP Airlines, $60,000,000. (See Financial Column.)

FREIGHT CARS

► *Canadian National.*—Ordered 1,980 cars costing over $21,000,000; Eastern Car Company will build 450 70-ton longitudinal hopper cars, 130 50-ton air dump cars; National Steel Car Corporation, 200 50-ton overhead-iced refrigerator cars, 200 70-ton drop-end highside gondola cars, 150 70-ton triple hopper cars; Marine Industries, Ltd., 150 30-ton flat cars (for CNR Newfoundland division), 200 70-ton covered hopper cars; ACF Industries, 400 50-ton automobile box cars for CNR's U.S. lines; Magor Car, 100 70-ton flat cars for Grand Trunk Western; deliveries expected to be completed by mid-1957. *(More on next page)*

RAILWAYS IN THE MARKET—THIS WEEK

CONTINUED

► *Kansas City Southern.*—Ordered 50 70-ton hopper cars, Pullman-Standard, for delivery next September.

LOCOMOTIVES

► *Canadian National.*—Ordered 240 diesel-electric units costing over $43,300,000; for service in Canada, Montreal Locomotive Works will build 80 switchers and road switchers, and General Motors Diesel, Ltd., 67 switchers and road switchers and 16 passenger units; for U.S. service on the Grand Trunk Western, the Duluth, Winnipeg & Pacific, the Central Vermont and CNR New England lines, 77 switchers and road switchers were ordered—52 from Electro-Motive, and 25 from Alco Products; passenger units will be used to dieselize Montreal-Toronto runs of "International Limited" and other name trains.

PASSENGER CARS

► *Minneapolis & St. Louis.*—Ordered two rail diesel cars (RDC-4), Budd Company; cars specially modified to seat 12 passengers; delivery in November.

New Facilities

► *Chesapeake & Ohio.*—Will expand freight-car-fabricating facilities at Raceland, Ky., shops at cost of $1,500,000.

► *Grand Trunk Western.*—Will spend $6.8 million on two new Michigan yards within the next two years: (1) Battle Creek, estimated cost $4.3 million, to be completed by 1958; (2) Flint, estimated cost $2.5 million, to be completed in 1957; also will install double run of 108-in. multiplate pipe near Nutica, Mich., and replace 75-ft DPG single track bridge with fill.

► *Missouri Pacific.*—Ready to begin construction of $8 million to $10 million double hump push-button yard in northeast industrial district, Kansas City; yard will contain 78 tracks, accommodate about 15,000 cars a day.

► *Northern Pacific.*—Will extend centralized traffic control in Montana this year with $1.6 million installation between Livingston and Helena, 123 miles; installation will reduce operating costs as well as time required by trains on this section, and, coupled with complete dieselization of territory, will permit removal of nearly 33 miles of alternate main track now used by eastward freight trains between Bozeman and Logan; it also will eliminate 16 miles of second main track, and convert eight miles of second main track to operating passing sidings between Livingston and Bozeman.

► *Pacific Fruit Express.*—Plans to build $1 million ice manufacturing plant at Odgen, Utah; capacity 600 tons daily; new mechanized icing facilities at Council Bluffs, Iowa, have been placed in service.

► *Southern Pacific.*—Construction projects, estimated costs in parentheses, include: concrete lining of 3,610-ft tunnel no. 6 on Coast Division near Santa Margarita, Cal. ($319,000); rebuilding Beale street team track in San Francisco because of elevated freeway construction, and expanding its capacity from 16 to 31 cars ($195,000).

Technical Tidings

Selected from May Railway Monthlies

Batteries for 175 diesels, for a 131-car passenger fleet, and for the signal system on a 794-mile railroad are all serviced in a shop staffed by two electricians and a foreman. Layout and equipment for this up-to-date facility are described in Railway Locomotives & Cars.

•

A material combining unusual structural and decorative qualities has been used on three of the recently-introduced high-speed lightweight trains. Railway Locomotives & Cars explains the role played by aluminum in the structure, sheathing and interior finish for the "Talgo," "Aerotrain" and "Train X."

•

Why should railroads operating the some types of diesels under similar conditions experience such different problems when they try to use low grade fuels? A round-up of the problems encountered are described in the first installment of a survey by Railway Locomotives & Cars.

•

Faced with the problem of renewing rail on a second main track, the Erie took up that track for 21 miles and installed centralized traffic control on the other track. Equilateral turnouts at the ends of double track permit trains to make diverging moves at maximum speed: 50 mph for freight trains and 75 mph for passenger trains. This is the beginning of CTC on a 248-mile division. Railway Signaling & Communications gives the details.

•

Anderson, Ind., city council passes ordinance to allow railroad to replace crossing watchmen with automatic flashing-light signals with or without short-arm gates at all 23 crossings of streets with the New York Central. Railway Signaling & Communications tells how the use of time cut-outs and supervisory manual control meet local street traffic problems.

(Continued from page 8)
tive necessity' " should be permitted, as it would be with adoption of the Cabinet Committee recommendations. Rate-making with minimums fixed no lower than "competitively necessary," Mr. Rothschild said, "is not conducive to full progress in transportation."

He said the growth of oil pipe lines and the diversion of steel ore to Great Lakes carriers "exemplify how the public benefits from the development of service capabilities," and asked if it would "make good sense" to force pipe lines to raise rates just to keep railroads hauling oil.

Mr. Rothschild spoke in conjunction with "Railroad Day" activities promoted by the Newark Railroad Community Committee.

March Net Was Down $8 Million

It was $70 million, compared with $78 million in March 1955—Three months' net was down $13 million

Class I railroads in March had an estimated net income, after interest and rentals, of $70,000,000, according to the Bureau of Railway Economics of the Association of American Railroads.

That was a decrease of $8,000,000 below the net of $78,000,000 reported for March 1955. Because the January-February net was off $5,000,000, the net for this year's first quarter was $13,000,000 less than that of 1955's first three months—$163,000,000 compared with $176,000,000.

March's net railway operating income, before interest and rentals, was $88,976,188, down more than $9½ million from the $98,564,472 reported for March 1955. The three-months' net railway operating income was $218,900,246, compared with $235,067,723 in the like 1955 period.

Nineteen Class I roads failed to earn interest and rentals in this year's first quarter. Rate of return for the 12 months ended with March averaged 4.16%, compared with 3.63% for the 12 months ended with March 1955.

CLASS I RAILROADS—UNITED STATES

	1956	1955
Month of March		
Total operating revenues	$ 888,984,912	$ 827,431,700
Total operating expenses	678,174,935	612,844,242
Operating ratio—percent	76.29	74.07
Taxes	99,941,480	94,202,283
Net railway operating income (Earnings before charges) ...	88,976,188	98,564,472
Net income, after charges (estimated)	70,000,000	78,000,000
Three Months ended March		
Total operating revenues	$2,535,561,742	$2,307,923,152
Total operating expenses	1,980,694,846	1,767,777,513
Operating ratio—percent	78.12	76.60
Taxes	269,326,709	242,996,101
Net railway operating income (Earnings before charges) ..	218,900,246	235,067,723
Net income, after charges (estimated)	163,000,000	176,000,000

Railroads Plug for "Three Shall Nots"

Proposals to grant more freedom for competitive rate-making regarded as of "greater immediate importance" than other recommendations of Cabinet Committee

The railroad industry last week advised a House Interstate Commerce subcommittee that incorporation into the Interstate Commerce Act of the "three shall nots" was of "greater immediate importance" than enactment of other legislation recommended by President Eisenhower's Cabinet Committee on Transport Policy and Organization.

The three "shall nots" are those rate-freedom proposals of the Cabinet Committee which would stipulate that, when the Interstate Commerce Commission reviews competitive rates proposed by one form of transportation, it shall not consider: (1) The effect of such rates on the traffic of any other mode of transportation; (2) the relation of such rates to the rates of any other mode of transportation; (3) whether such rates are lower than necessary to meet the competition.

The industry's position was stated in presentations made before the subcommittee, headed by Representative Harris, Democrat of Arkansas, which is considering proposed legislation to implement the Cabinet Committee recommendations. The presentations were made for the Association of American Railroads by its vice-president and general counsel, J. Carter Fort, and by Jervis Langdon, Jr., who is chairman of the Association of Southeastern Railroads. The Cabinet Report bills are H.R.6141 and H.R.6142, but the hearing also involves other pending bills to end special rates to the government, to amend the Interstate Commerce Act's fourth section along lines recommended by the ICC, and to amend the act's Part IV as proposed by the Freight Forwarders Institute.

The rate-freedom proposals were dealt with by Mr. Langdon, who said enactment of the "three shall nots" would advance the interest of the public in a sound national transportation system. He explained:

"No longer would the higher cost form of transportation or the form with the less desirable service be protected with arbitrary parts of available traffic. In competing for the public's favor, whether with lower rates reflecting lower costs or higher rates reflecting better service, the railroads and the regulated trucks would of course still be subject to ICC control over reasonable maximum rates (with the elimination of the faulty standard embraced in the 'three shall nots'); and over discriminatory rate practices. But competitive *railroad* rates would be judged in the light of *railroad* operating conditions; competitive *motor carrier* rates would be judged in the light of *motor carrier* operating conditions; and both would be put in the same positions as the regulated water carriers already occupy by virtue of the special provisions of section 305(c)."

Other rate proposals of the committee were also discussed by Mr.

Langdon. Of the proposal to forbid the commission to cut a rate "below the full cost of performing the services . . . exclusive of losses in other services," he said the railroads do not at this time urge such a change in the rate-making rule.

Neither do they think a change in declaration of national transportation policy is necessary "to achieve the basic proposal of the Cabinet Committee," Mr. Langdon continued. The Cabinet Committee recommended a rewriting of the policy declaration.

"If in its interpretation of the present policy," Mr. Langdon said, "the ICC would define an 'unfair or destructive competitive practice' as limited to rates which are non-compensatory, there would be no occasion to change its language. The railroads believe that such a revised interpretation of the present policy would follow as a matter of course if the 'three shall nots' were enacted into law."

As to suspension of rates, the Cabinet Committee recommended that the maximum suspension period be shortened from seven months to three months, and that a carrier proposing a rate change be relieved of the burden of proof if the protestant be another carrier. The railroads favor a shorter suspension period, but would not object to five months, Mr. Langdon said.

As to the burden of proof, they disagree with the Cabinet Committee, being of the opinion that such burden should in all instances remain with the carrier proposing a rate change. The reason, Mr. Langdon explained, "is that, with the elimination of the faulty standard for competitive rates, the compensatory character of such rates would become the turning point of most suspension proceedings, and on this point the proponents of the rates are best equipped to furnish the necessary proof."

Fourth Section—Having long advocated repeal of the fourth section, the railroads naturally favor the Cabinet Committee proposal that the section be made less restrictive, Mr. Langdon said. He went on to suggest, however, that the committee might want to avoid controversy on the matter by confining fourth-section changes at this time to those proposed by the ICC.

The commission's proposal, before the committee in a separate bill (H.R.6208) would amend the section to permit railroads having circuitous routes to meet competition of direct routes by publishing rates involving fourth-section "departures" without prior approval of the commission. This would limit the commission's fourth-section power to the matter of relief over direct routes.

As to volume rates, Mr. Langdon said the railroads approve the idea as set out in the Cabinet Report, but they think the ICC already possesses adequate authority to approve such rates.

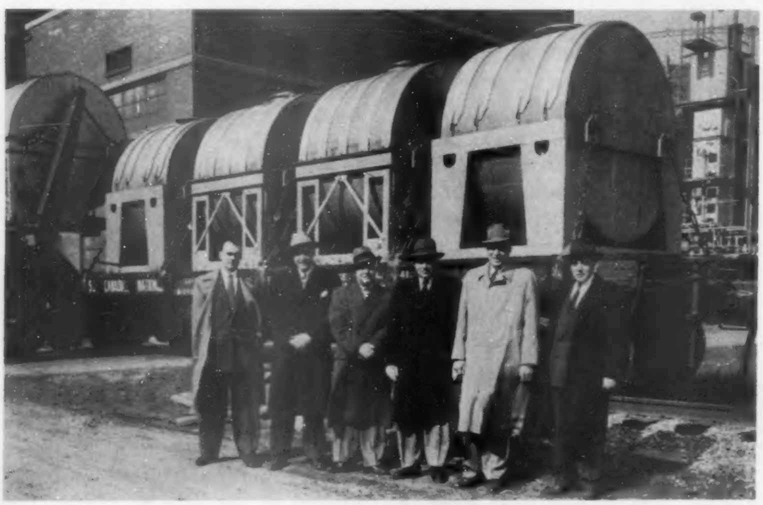
The railroad industry's positions on other Cabinet Committee recommendations were set out in Mr. Fort's statement. They support the "purposes and objectives" of proposals "that for-hire carriage performed under the guise or subterfuge of private carriage be restrained or regulated;" that the definition of contract carriers be sharpened and that such carriers be required to file minimum rates actually charged; and that the act's provisions exempting water carriers of commodities in bulk be repealed.

Cabinet Committee recommendations on which the railroads take no position at this time were listed by Mr. Fort as the proposal to amend provisions (now in section 22) relating to special rates to government agencies, and the proposals to amend the forwarder-regulation provisions.

Passenger Deficit—The Cabinet Committee recommended that the ICC be given authority to override state commissions to permit abandonment of unprofitable services. The railroads "endorse this recommendation," Mr. Fort said, but they believe consideration of it might be deferred pending developments in the passenger investigation recently undertaken by the ICC (Railway Age, March 26, p. 38).

Meanwhile, Mr. Fort had noted that the Cabinet report failed to deal with many matters which the railroads consider of major importance. He had in mind subsidies and other public aids received by competitors of the railroads, restrictions on operations by railroads of other forms of transportation, and the "discriminatory" federal excise taxes on amounts paid for for-hire transportation.

Water carriers on the inland waterways were represented by Chester C. Thompson, president of Ameri-



CNR and Lever Brothers Try Something New

Five aluminum containers are mounted on a flat car in an experiment by the Canadian National and Lever Brothers for shipping bulk liquids from Toronto to North Sydney, N.S., where they are transferred to ferry for movement to Newfoundland. Huge drums are mounted in steel cradles with capacities of 12,000 lb each. On hand for initial loading were (above, left to right), L. McIlroy, traffic supervisor, Lever Brothers; P. J. Welsh, freight traffic representative, CNR; W. J. Rae, manager, transportation and supply, Lever Brothers; E. G. Johnston, division freight agent, CNR; H. C. Pender, chief engineer, Lever Brothers; and A. G. Lecours, freight traffic representative of the Canadian National.

can Waterways Operators. He opposed legislation implementing the Cabinet Committee recommendations as a "package deal," although he conceded that carrier members of his association were divided as to the individual recommendations.

Citing previous testimony to the effect that 90% of the transportation on inland waterways is unregulated, committee members asked Mr. Thompson if he were arguing for "protection" of only 10% of the traffic. He replied in the negative, saying that railroad competition was "just as effective" against unregulated water transportation as against the regulated portion.

When the questioners suggested that the unregulated water carriers were in a position to protect themselves by immediate action to meet railroad rate adjustments, Mr. Thompson said that was true. He added, however, that the "controlling" factor was the inability of the water carriers to make up their losses in areas where they had no competition. "They are confined to the channels," Mr. Thompson said.

Mr. Thompson's presentation was closed with his response to a question from Chairman Harris who asked if it were good policy to require that a carrier proposing a compensatory rate be called upon to assume the burden of showing that such a rate would not adversely affect another mode of carriage. The answer was: "I think so, yes."

New Role for PRR Caboose

Needing a watchman's shanty for its trolley museum at Washington, Pa., the Pittsburgh Electric Railway Club acquired the above caboose from the Pennsylvania, figuring it would also serve as show piece. H. H. Vaughn, PRR assistant regional manager at Pittsburgh, hands brakeman's flag to L. J. Redman of club after loading caboose on truck for short off-rail run to museum.

Nine Roads Favor Penalty Per Diem

Nine railroads have joined in advocating enactment of legislation which would authorize the Interstate Commerce Commission to raise per diem rates during periods of car shortages. They would also expand the commission's general car service powers by the addition of continuing authority to prescribe maximum reasonable per diem charges as a means of promoting an adequate national supply of freight cars.

The nine roads are the Burlington, Santa Fe, Great Northern, Northern Pacific, Illinois Central, Louisville & Nashville, Chesapeake & Ohio, Gulf, Mobile & Ohio, and Denver & Rio Grande Western. Their proposal is different from the penalty per diem legislation which, advocated by the commission, is embodied in a pending Senate bill, S.2770.

Conflict—It was at the hearing on S.2770, held last week by the Senate Committee on Interstate and Foreign Commerce, that the nine roads announced their position, the principal statement in their behalf having been made by Eldon Martin, vice-president and general counsel of the Burlington. The committee also heard a statement in opposition to penalty per diem legislation, which was made by J. M. Symes, president of the Pennsylvania, who spoke also for 10 other roads—Southern Pacific, Texas & New Orleans, Union Pacific, Southern, Baltimore & Ohio, Delaware & Hudson, New York Central, Seaboard Air Line, Missouri Pacific and the North Western.

Among other presentations were those of Lester M. Selig, president of the American Railway Car Institute; and Victor Cooley, deputy director of the Office of Defense Mobilization. A statement in opposition to penalty per diem, which was prepared by George Glacy, vice-president of the Boston & Maine, was among statements filed for the record.

Several witnesses at the hearing represented lumber interests opposing ICC Service Order No. 910 which has been stayed by a court order. The ICC order directs railroads to discontinue practices which "wilfully delay the movement of loaded freight cars" for the purpose of increasing their time in transit.

The railroad industry's general opposition to penalty per diem was expressed at earlier hearings by Thomas L. Preston, general solicitor of the Association of American Railroads; Arthur H. Gass, chairman of the association's Car Service Division; and J. M. Hood, president of the American Short Line Railroad Association (Railway Age, April 16, p. 13).

Principal difference between the proposal made by Vice-President Martin of the Burlington, and S.2770, is the former's suggestion that penalty per diem charges required by the commission in emergency situations should be imposed uniformly against all carriers. S.2770 would permit the commission to impose the penalty charge on "one or more carriers."

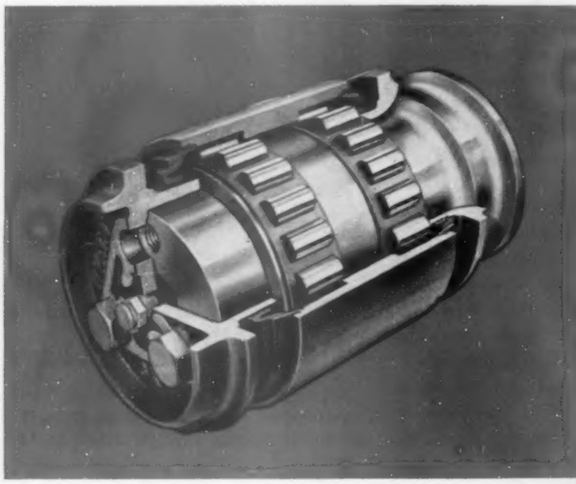
S.2770 does not contain a proposal like Mr. Martin's other recommendation, i.e., that authority to use the per diem rate in normal times to promote car ownership be added to the commission's general car service powers. Presumably, however, the ICC would not object to such further expansion of its powers.

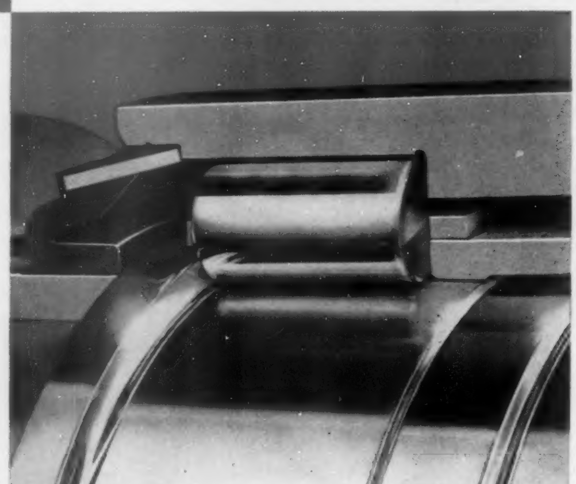
Mr. Martin's argument in support of his proposals was an elaboration of the following statement which he advanced as a "sound and obvious principle:" "Just so long as it is cheaper to rent a car than it is to own one—and that is the situation today—underbuilding will be the policy of strategically situated railroads, and construction will be held to minimum requirements. Conversely, however, if per diem charges were increased so as to make ownership more attractive than rental, the national car supply would automatically increase, because the improvident lines, which now use cars owned by others, would be compelled, in their own selfish interest, to own more cars."

President Symes of the Pennsylvania did not agree. He said:

"The idea of attempting to have

(Continued on page 16)





P&S Division Features Panel on Electronic . . .

Data Processing

The 30th annual meeting of the Purchases and Stores Division of the Association of American Railroads will be held in the Ivory Room of the Sheraton-Jefferson Hotel, St. Louis, May 16-18. Details of the program follow:

WEDNESDAY, MAY 16

Morning Session—10:00 to 12:00

Call to order by Chairman A. N. Laret, vice-president, purchases and stores, Frisco—Invocation—Address by Clark Hungerford, president, Frisco—Action on minutes of 1955 annual meeting—Appointment of resolutions and memorials committees—Remarks by Mr. Laret—Communications and announcements—Report of general committee—Address by Joseph F. Holland, general counsel, Pevely Dairy Company, St. Louis.

Reports of Committees
Manual Rules
Scrap

Afternoon Session—2:00 to 4:30

Reports of Committees
Reclamation
Forest Products
Electronic, Signal and Communications Material
Petroleum Products and Coal

THURSDAY, MAY 17

Morning Session—9:30 to 12:00

Reports of Committees
Annual Essay Contest
Purchasing Department Procedures
Office Supplies and Equipment
Material Handling
Simplification and Standardization

Annual Luncheon—Gold Room. The luncheon session will feature a special half-hour program on "The Right to Compete." Speakers at the session will be Philip A. Hollar, vice-president—assistant to president, AAR, and Holcombe Parkes, president of the Railway Progress Institute.

Afternoon Session—2:30 to 4:30

Panel discussion on electronic data processing equipment as a tool in railroad purchasing, stores and allied accounting functions. Moderator: J. S. Fair, general purchasing agent, Pennsylvania

FRIDAY, MAY 18

Morning Session—9:30 to 12:00

Reports of Committees
Stores Department Procedures
Diesel Parts
Closing business and installation of officers

(Continued from page 13)
new freight cars built because of an incentive in the per diem rate is unsound and will not correct a car shortage. The 'per diem urge,' a well-known expression in railroad parlance, would come into play. It would increase empty car miles in a move to get foreign cars home to avoid per diem—and certainly the creation of empty freight car miles is not a cure for a car shortage."

As the PRR president sees it, the car shortage has been due to inadequate railroad earnings, and an "abrupt increase in demands over a short period." The "real solution," he advised the committee, would come with enactment of legislation designed to improve the economic position of the railroad industry—"and legislation implementing recommendations of the President's Advisory Committee on Transportation would be an important step."

President Selig of the ARCI also mentioned the Cabinet Committee recommendations, urging early enactment of "those portions of the committee's proposals relieving railroads from over-regulation." The railroads' capacity to order equipment hinges upon their capacity to pay for it, Mr. Selig noted, adding: "Given freedom to operate under competitive conditions, railroads would be better able to plan ahead for growth which they recognize as imperative."

Meanwhile, Mr. Selig had told the committee that the institute had no legislative recommendations for solution of the present car shortage. "It is our belief," he said, "that railroads, the steel industry and the car builders are now thoroughly cognizant of the maladjustments forced by the feast and famine cycles and that planned, long-range buying will eventuate."

Mr. Selig's presentation also included these assertions:

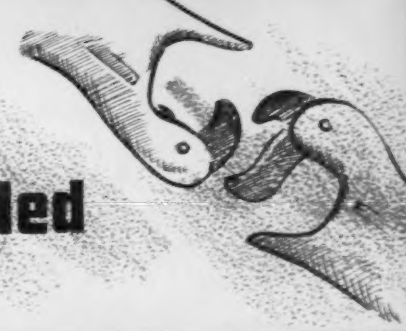
1. There is no lack of freight car building capacity if railroads are enabled to spread their ordering over a period of years ahead and avoid the sudden peaks and valleys.

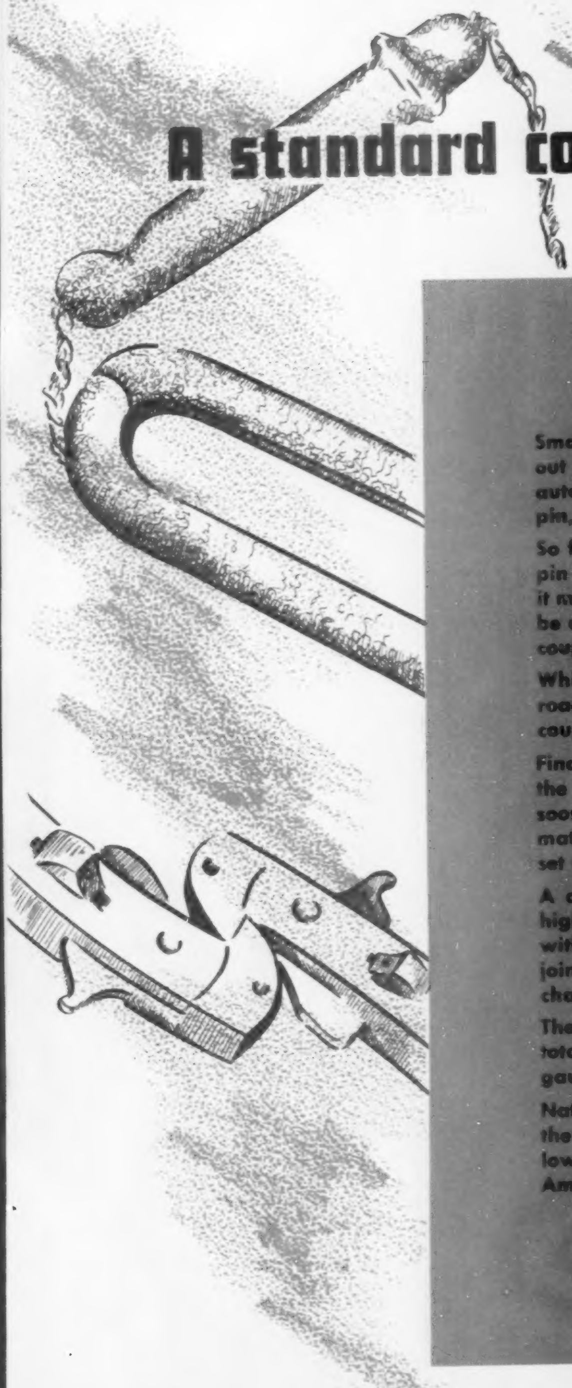
2. Leveling out of ordering coupled with emphasis upon standardization of design where cars are to be used in interchange should lead to lower costs per unit.

3. If railroads would place their annual orders for freight cars with independent car builders, instead of maintaining at high overhead costs their own empty shops and idle facilities during slack periods, the overall cost of freight cars would be reduced, and would warrant greater research and development by car builders.

(More News on page 53)

A standard coupler was needed





Small freight cars or large, small locomotives or mighty, all would be useless without some way to join them together; thus, we find the history of the present day automatic coupler most interesting. Many years have passed since the link and pin, the Miller Hook and the first coupler of Eli Janney.

So frightful were the accidents of coupling and uncoupling with the old link and pin method that in 1893 Congress passed the Safety Appliance Act, which made it mandatory that after January 1, 1898, all cars used in interstate commerce must be equipped with couplers which would couple automatically on impact, and uncouple without a man stepping between the cars.

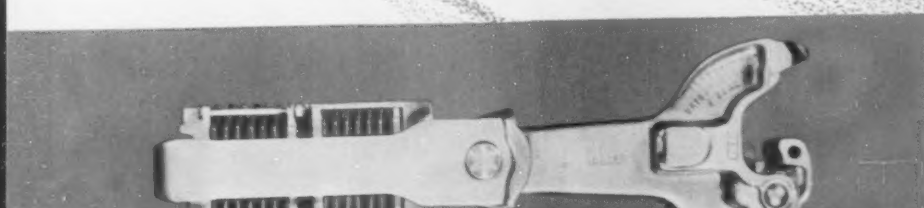
While the federal statute saved countless limbs and lives, yet it posed for the railroads a tremendous problem, in that soon there were over 100 different types of couplers, knuckles, locks, and parts.

Finally, in 1916, the Type "D" Coupler was adopted as standard for railroads of the United States, Canada and Mexico. With the adoption of a standard coupler it soon became evident that a set of specifications would be necessary to control material, tolerances and so forth. In 1918, the Association of American Railroads set up the first specifications on the manufacture and inspection of couplers.

A comprehensive inspection and gauging program, to assure the railroads the highest quality couplers, is conducted by the coupler manufacturers in accordance with the A.A.R. specifications. Also, the coupler manufacturers periodically engage jointly in an extensive program consisting of complete inspection, gauging, interchange and testing of "E", "F" and "H" couplers.

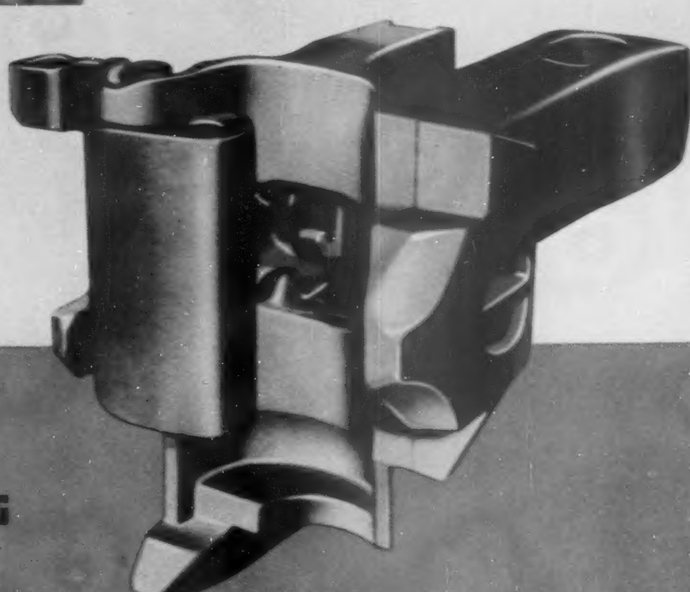
These A.A.R. specifications, revised and expanded from time to time, require a total of 133 gauges for the three couplers — "E", "F" and "H" — covering 563 gauging points.

National is proud to have played, and to continue to play, an important part in the development of modern railroad couplers, and will continue to more than follow the inspection and gauging specifications set down by the Association of American Railroads.



NATIONAL DRAW GEAR ASSEMBLY
with National MF-400 Rubber-Cushioned Draft Gear

50 GAUGES
214 GAUGING POINTS



TYPE "F" INTERLOCKING COUPLER

The Type "F" coupler was developed, at the request of the railroads, for freight service after the proven ability of the highly successful Type "H" tightlock coupler in passenger service. Stronger than the Type "E", with interlocking wings for alignment, the Type "F" is proving its many advantages in service today.

None of the parts are machined, but with close tolerance control the free slack between knuckles has been reduced to about 50 per cent of that in the "E". Another safety factor is the centrally located shelf on the lower front face which serves to support a conventional type coupler in event of a pull-out.

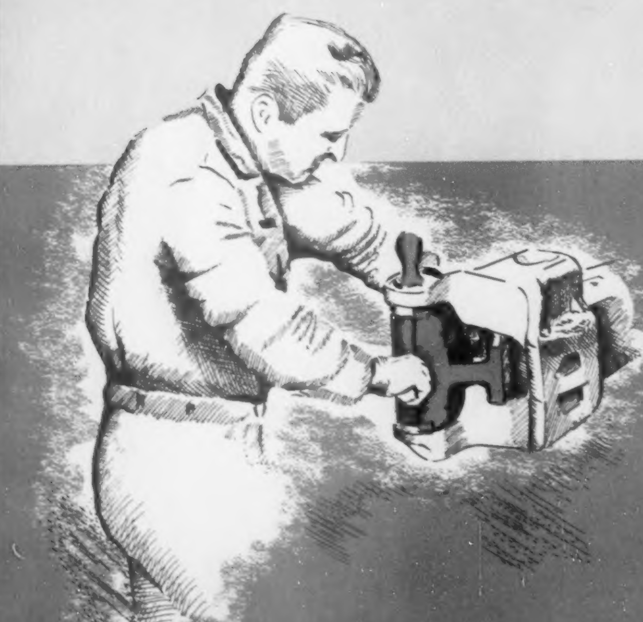
STANDARD "E" COUPLER

4

GAU

18

GAU
POI



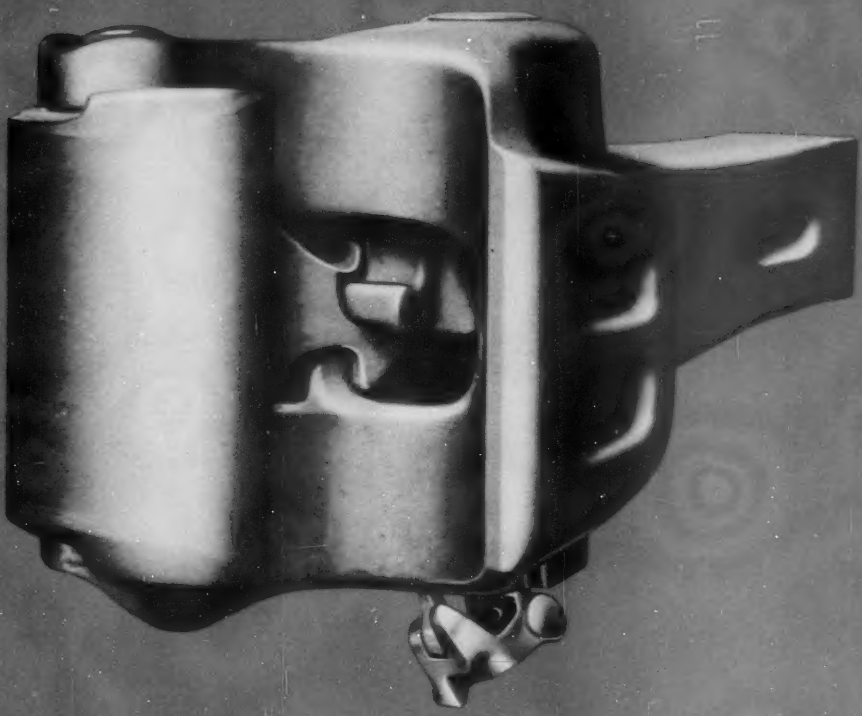
Illustrated above are the 47 gauges used on the "E" coupler. Shown on this page are two of the numerous gauging operations which all National "E" couplers must pass before shipment to railroads.

47

GAUGES

182

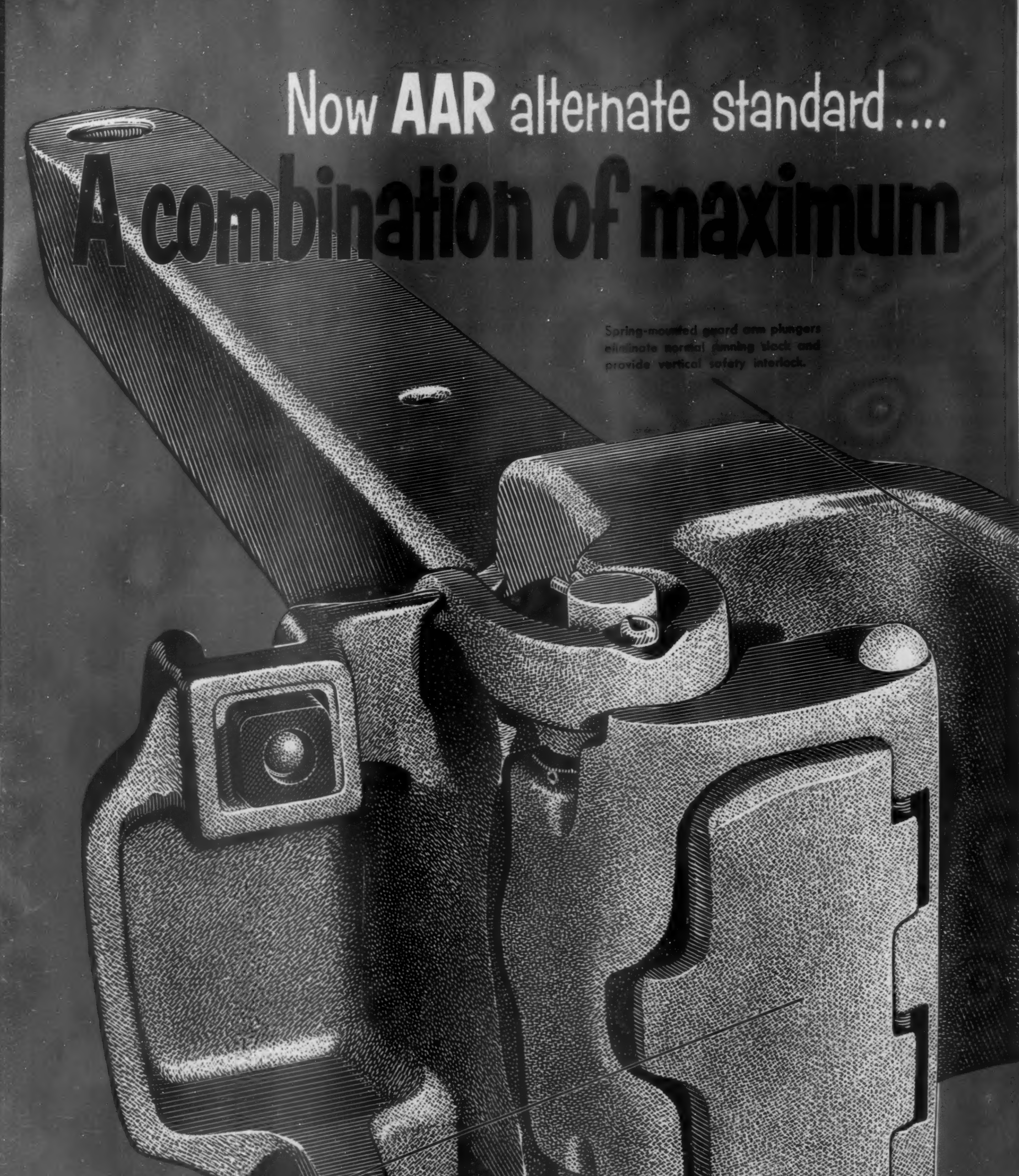
GAUGING POINTS



The A.A.R. Standard Type E-60 coupler, proud successor to the Type "D" coupler, became standard in 1932. It is made of Grade B steel with high tensile steel knuckle and lock. A set of manufacturing gauges for this type of coupler costs approximately $14,000. with several sets required for quantity production (A set of master gauges required for making and checking the manufacturing gauges costs $12,000.). This type of coupler is also produced in high tensile steel.

The high tensile steel knuckle is purposely designed to be somewhat weaker than the body of the coupler or attachments. In other words, it is the "safety valve" used to protect the more expensive and less readily replaceable parts of the draft system.


A.A.R.


Now AAR alternate standard....
A combination of maximum
Spring-mounted guard arm plungers eliminate normal running slack and provide vertical safety interlock.
Resilient knuckle faces provide additional slack-absorption when couplers are in extreme buff position.

safety at minimum cost... the Controlled Slack Coupler

Fully meets all AAR test specifications

This is important news for the railroad interested in safe, smooth coupler operation...at the lowest possible costs for new passenger cars. Controlled-Slack Couplers are also an ideal application for modernizing existing cars.

Over *2 billion* car and locomotive miles of high-speed passenger train service have provided an excellent record of safety, comfort and smooth train operation.

Controlled-Slack Couplers and Slack Free Yokes can be applied to all passenger cars with standard sill spacing, without need for center sill alterations. *Here's a coupler that offers you a safe, practical way to save money.*

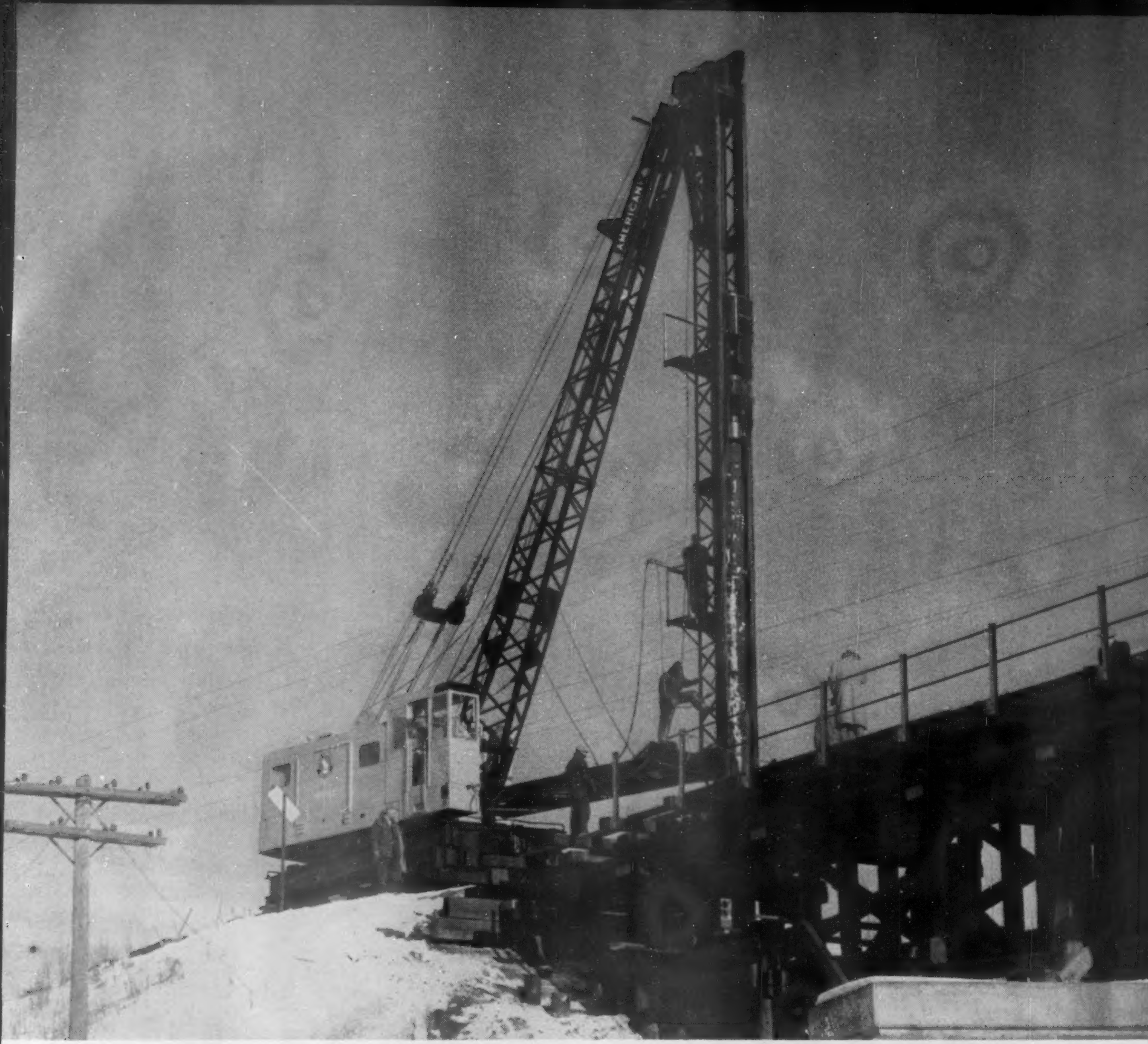
type E controlled-slack coupler

A contribution to railroad operating economy—through the Research and Development of

AMERICAN STEEL FOUNDRIES

Prudential Plaza, Chicago 1, Ill.

Canadian Sales: International Equipment Co., Ltd.,
Montreal 1, Quebec



17° BELOW, BUT THE JOB'S ON SCHEDULE

Great Northern Crew Drives 1 Pile Every 4 Minutes

Railroads operating in the snow belt run into additional maintenance and construction problems during the long winter season! In the West, rains cause washouts and landslides. In the Midwest, cold weather, snow and frost are the big obstacles. The best equipment, like American DiesElectric Locomotive Cranes is required to operate normally in sub-zero temperatures! When the picture above was taken, it was 17° below zero, but the job was right on time! In fact, the Great Northern Railway's big 40-ton American and a Syntron diesel pile hammer were driving one 45-foot pile every 4 minutes! The frost, hard as rock, was 27 inches deep!

The ability to produce at top capacity in any climate, on every assignment is just one of American's profit features! Add to this, sensitive air controls and the patented* DiesElectric system that cuts maintenance costs up to 50%, and you know why American Cranes are an important part of modernization plans and purchases of major railroads—like the Great Northern. For the complete facts on American DiesElectric Locomotive Cranes—in 25 to 80-ton capacities—write:

**U.S. Patent No. 2083460*

AMERICAN HOIST
and Derrick Co.

St. Paul 1, Minnesota

SHOES ARE LIKE BOXCARS . . . WHY?

No one would put newspaper soles on a pair of fine shoes.
But aren't the old-fashioned floors, still often specified for modern freight cars, much like *newspaper soles?*

Today you can specify modern flooring—N-S-F*—and profit from floors that never splinter, never need replacing . . . floors so strong they even add structural strength to the underframe of the cars.

*N-S-F (T.M.): NAILABLE STEEL FLOORING

Made and sold only by

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STRAN-STEEL CORPORATION

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NATIONAL STEEL CORPORATION

Complete engineering and cost data available from our representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York.

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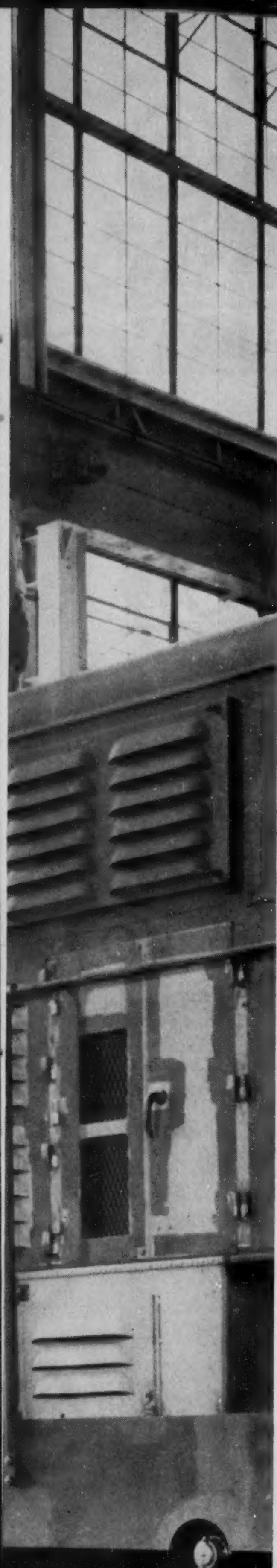


SIMPLIFIED BASIC CIRCUITS and fewer contacts within the circuits help G-E control give higher locomotive reliability.

G-E CONTROL helps assure smoother locomotive handling—provides 30% higher dynamic braking effort than other equipment.

MINIMUM MAINTENANCE is required between annual inspections because G-E control has fewer moving parts.

...outlasts ALL other insulating materials!

The installation of Streamlite HAIRINSUL into new refrigerator cars is a one-time investment, because it outlasts the life of the car, and can be used again and again.

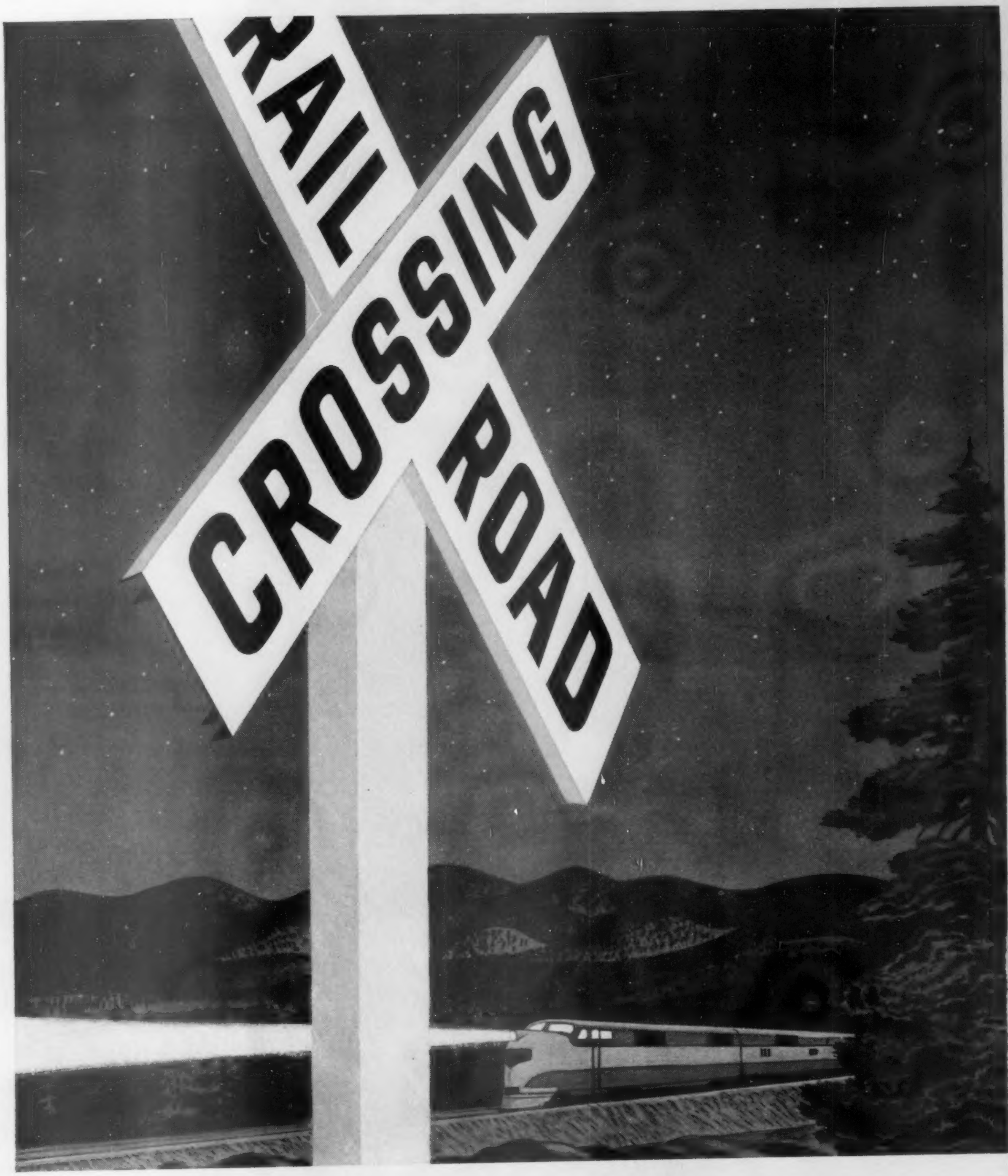
The successful use of all-hair HAIRINSUL in refrigerator cars for half a century is the best testimony that service conditions never impair its high insulating efficiency.

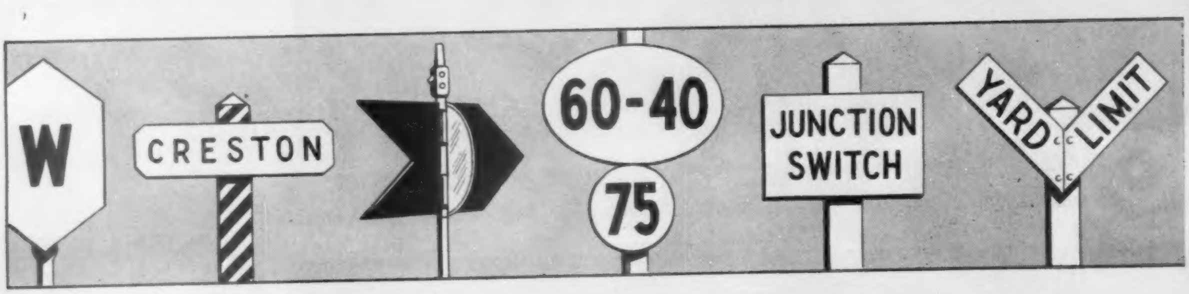
Some of the major reasons why Streamlite HAIRINSUL is specified by leading refrigerator car lines are given at the right. Write for complete data.

AMERICAN HAIR & FELT COMPANY
Merchandise Mart • Chicago, Illinois

- **LOW CONDUCTIVITY** — Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.
- **LIGHT WEIGHT** — Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.
- **PERMANENT** — Does not disintegrate when wet, resists absorption. Will not shake down, is fire resistant and odorless.
- **EASY TO INSTALL** — Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall section between fasteners.
- **COMPLETE RANGE** — STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.
- **HIGH SALVAGE VALUE** — The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED


RAIL
CROSSING
ROAD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CRESTON
60-40
75
JUNCTION
SWITCH
YARD
LIMIT

Reduce maintenance costs with aluminum signs!

ONE OF MANY WAYS KAISER ALUMINUM SERVES THE RAILROAD INDUSTRY

EVERY DAY more and more railroads are switching to new and superior way signs made of standard Kaiser Aluminum sheet and extruded shapes.

These remarkable signs greatly reduce maintenance costs and reflect the high quality standards of the railroad industry.

Longer Lasting! Unlike steel or wood, aluminum signs never rust or rot—stay bright and attractive looking for years.

High Strength! They are designed to withstand winds up to 100 miles per hour.

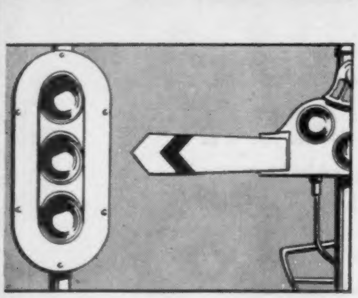
Easy-To-Handle! An extruded crossbuck made of Kaiser Aluminum weighs only 10 to 15 pounds—as compared with old fashioned crossbucks weighing about 100 pounds.

Brighter, Safer! Aluminum signs make an excellent base for paint and are also ideal for use with "Scotchlite" Brand Reflective Sheeting, which many major railroads have adopted as a standard reflector. This combination of aluminum and reflective sheeting assures the utmost in rugged durability. And extra safety is assured because "Scotchlite" sheeting is up to 200 times brighter than the whitest painted sign under all weather conditions and at all angles.

Your local Kaiser Aluminum sales office will be happy to give you full information and fabricating assistance.

Aluminum signs are just one of the many ways that this strong, durable metal serves the railroad industry. New lightweight aluminum tank cars, passenger trains, locomotive components are other examples of the use of aluminum to reduce costs and increase profits for railroaders.

We are eager to work with you as "idea partners," offering you fabricating knowledge, engineering skill, cost analysis, design assistance. Call the Kaiser Aluminum sales office listed in your telephone directory. Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office*, Palmolive Bldg., Chicago 11, Illinois; *Executive Office*, Kaiser Bldg., Oakland 12, California.

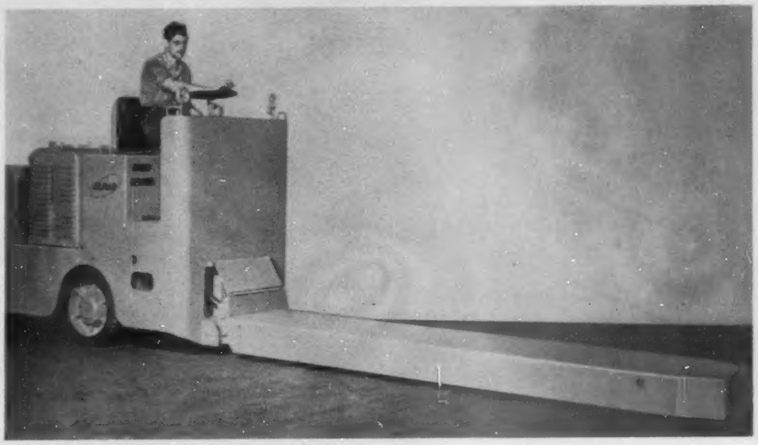


Kaiser Aluminum

setting the pace—in growth, quality and service

WHAT'S NEW in Products

SITDOWN TYPE LIFT TRUCK



What is called the first sitdown type electric-powered low lift platform truck is now available. The manufacturer claims several advantages for the new design, which permits the driver to sit down rather than stand during handling operations.

Operator fatigue is said to be reduced, especially on long hauls, or where continuous operations keep the truck working for extended periods without relief; operator vision is substantially improved, because, if bulky loads are to be handled, the truck can be built so the operator faces away from the load, giving him a clear view forward while traveling; operator training is simplified because controls are similar to those of an automobile and almost identical with those on widely used sitdown type fork truck models. The truck is available in capacities from 10,000 to 20,000 lb, and platform sizes can be varied to meet specific needs. *Elwell-Parker Electric Company, Dept. RA, 4205 St. Clair ave., Cleveland 3* •

DIESEL AIR HORNS

There is now on the market a diesel warning horn in which the individual horns are mounted on a standard base to allow wide selection of combinations of pitches for best tone selections. The arrangement also allows quick replacement, if necessary, of one horn without depriving the equipment of the use of the remainder. Should one note need attention, it can be removed and after a cover plate is attached the remaining horns can continue in service until the defective unit is repaired or replaced.

One base is used for all horn combinations (one to five) which fit a standard horn mounting pad.

Maximum dimensions with horns on all five pads are: height 15⅛ in., width 14¼ in., and length 20¼ in. Weight is 3¼ lb for each single note and 8½ lb for the base.

Reversing or mounting horns in any combination is by two bolts. Replacement of the bronze diaphragms can be done without removing the horn from the mounting. Construction is of brass and bronze to resist the elements. *Buell Manufacturing Company, Dept. RA, 919 West 49th Place, Chicago* •

DOCK BOARD LINE EXPANDED

To meet increased demand for lightweight magnesium truck dock boards, one manufacturer now offers 48 standard sizes in 1,000- or 2,000-lb axle load capacity.

The boards are crowned to compensate for height differences between truck and dock level, and can be reversed when truck bed is lower than dock. A patented automatic drop-lock to anchor the board in place and prevent slipping is an exclusive feature. *Magline, Inc., Dept. RA, Pinconning, Mich.* •

MAINTENANCE ELECTRODE

An iron powder type electrode for maintenance and repair welding has been recently announced. The new electrode, called Jet-Hard BU-90, is designed to produce a medium carbon, medium alloy deposit for building up worn parts with a dense, moderately hard and tough machinable surface to resist shock and abrasion. A high deposition rate is said to result in a 34 per cent to 45 per cent increase in the amount of metal deposited per minute with the slag practically self-removing.

Chromium and manganese in the deposit are said to increase the abrasion and impact resistance as well as the toughness of the weld deposit. Tests reveal that this hardness range runs from 27 to 40 Rockwell C.

The electrode is for operation on d-c, electrode negative, or a-c current and is available in 5/32-in., 3/16-in. and ¼-in. sizes. *Lincoln Electric Company, Dept. RA, Cleveland, Ohio* •

Could "Relations" Work Be Better Organized?

If a large-scale selling effort is to succeed, effective organization of sales forces is a top-priority requirement. This observation is applicable, regardless of whether the merchandise to be sold is a tangible article, or an idea. The product to be sold may have merit, and the sales forces and advertising support may be competent and adequate in quantity—but the sales effort can still fall short of success unless the forces are skillfully applied at strategic times and places.

It's like an army in a big battle. Having a righteous cause to fight for, and plenty of courageous and well-armed troops—these are mighty big helps toward victory. But deploying the right numbers of the right kind of troops to strategic points at the right time is at least half of the battle.

If the division of responsibility between artillery, infantry and engineers is not clearly outlined, friction and confusion can result—which may be highly encouraging to the enemy. Unified command, with sufficient local authority to encourage initiative, is usually desirable.

It has been this paper's observation that there is no industry in America which, on the average, surpasses the railroads in the competence of the men to whom it entrusts the function known as "public relations." A similar observation may be made of the caliber of officers to whom the railroads entrust all their "contact" responsibilities. To gage the accuracy of this assertion, we suggest this test: *List the names of ten or a dozen of the leading men who represent the railroads in these capacities, and then try to match this roster with a similar list from any other industry.*

AAR, a Big Advance

The railroads are—comparatively speaking at least—ably staffed for their varied dealings with the public. Moreover, most of the ideas about public policy toward transportation which the railroads have been endeavoring to "sell" can find objective support from disinterested "outsiders" (e.g., shippers or academic scholars). In other words, the railroads have a meritorious article to sell, and a competent sales staff. Nevertheless, progress has been mighty leisurely in winning acceptance of some of the salutary ideas that railroads are seeking to promote.

The railroad industry, over twenty years ago, took a great forward stride in more effectively organizing itself for dealing with joint and collective problems when the present Association of American Railroads was organized to take over the functions of the predecessor American Railway Association, and a number of "independent" associations. The ARA had been a loosely knit association—not originally conceived as an organic whole. It was, rather, an amalgamation that "just growed" out of a lot of separate associations. The traditional practices of older organizations, with a tempo geared to earlier times, were considerably modernized and unified when ARA became AAR.

Conditions—and the most effective and realistic methods of dealing with them—change with the times; and organizations thrive best which constantly adapt themselves to the changes in their environment. It might very well be that the present organization of the railroads for handling their problems of public contact is the very best that could be conceived—including the present division of functions among the national organization, the regional associations, and the individual railroads. On the other hand, it is also a fact that organizations, methods and techniques of individual railroads are constantly being improved for better adaptation to environment.

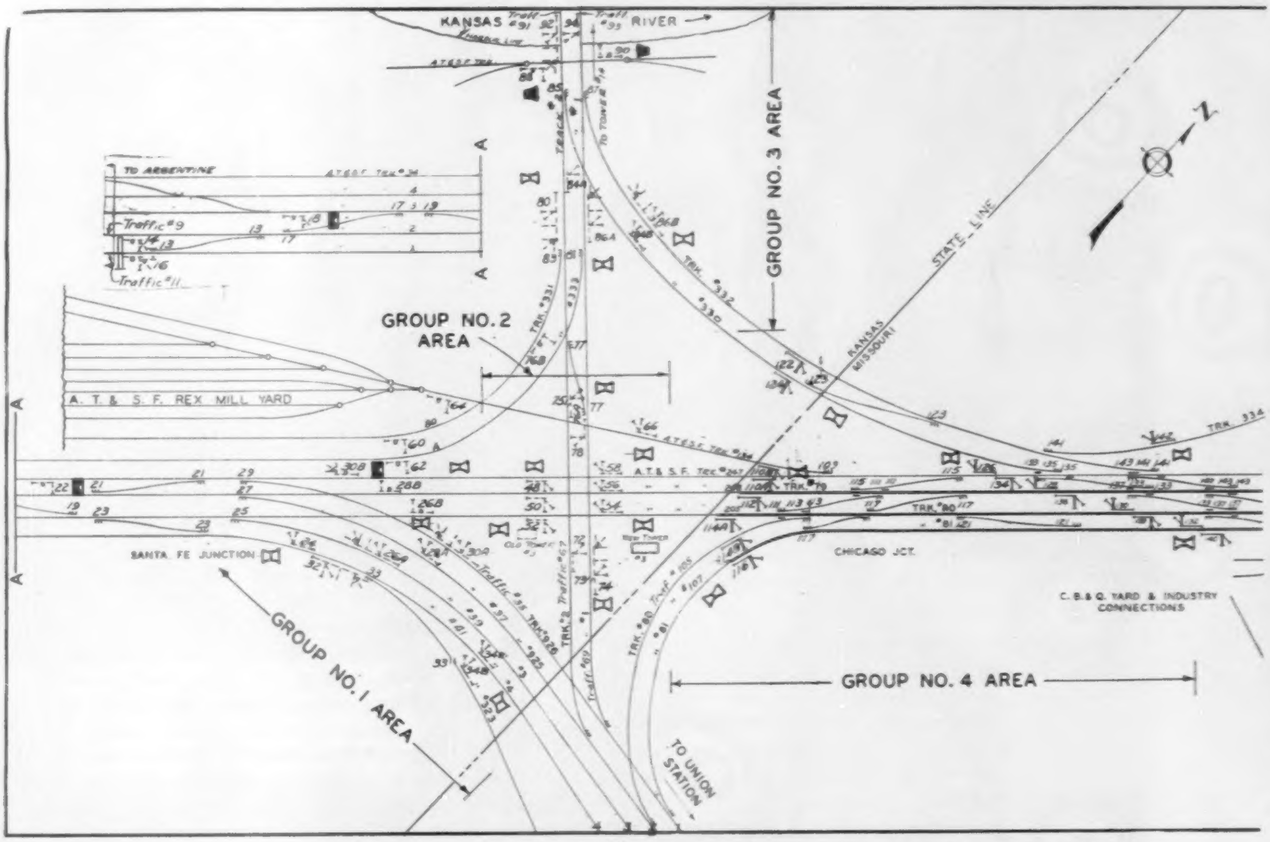
The same process is probably just as appropriate to the railroads' collective activities—whether at the local, state, regional or national levels—as it is to affairs managed by the individual companies.

Specialization Needed

In public relations and other "contact" duties, there are some functions that can best be performed by individual railroads—while others are properly a joint responsibility, at either the local, state, regional or national levels. Some "contacts" necessarily involve important detail which can be safely entrusted only to men of legal training and experience. Other "contact" work involves the press, and needs men who know the techniques of journalism. Still other important "contacts" have to do with groups of people with interests parallel to those of the railroads—and can best be arranged by people who have some acquaintance with the specific interests of these potential allies.

The recruiting, supply and deployment of the forces needed for an effective campaign to "sell" ideas is a job requiring generalship of high quality. And attention given by the ablest leaders of the industry to maximum efficiency of organization in this area would certainly be no unprofitable use of their time.

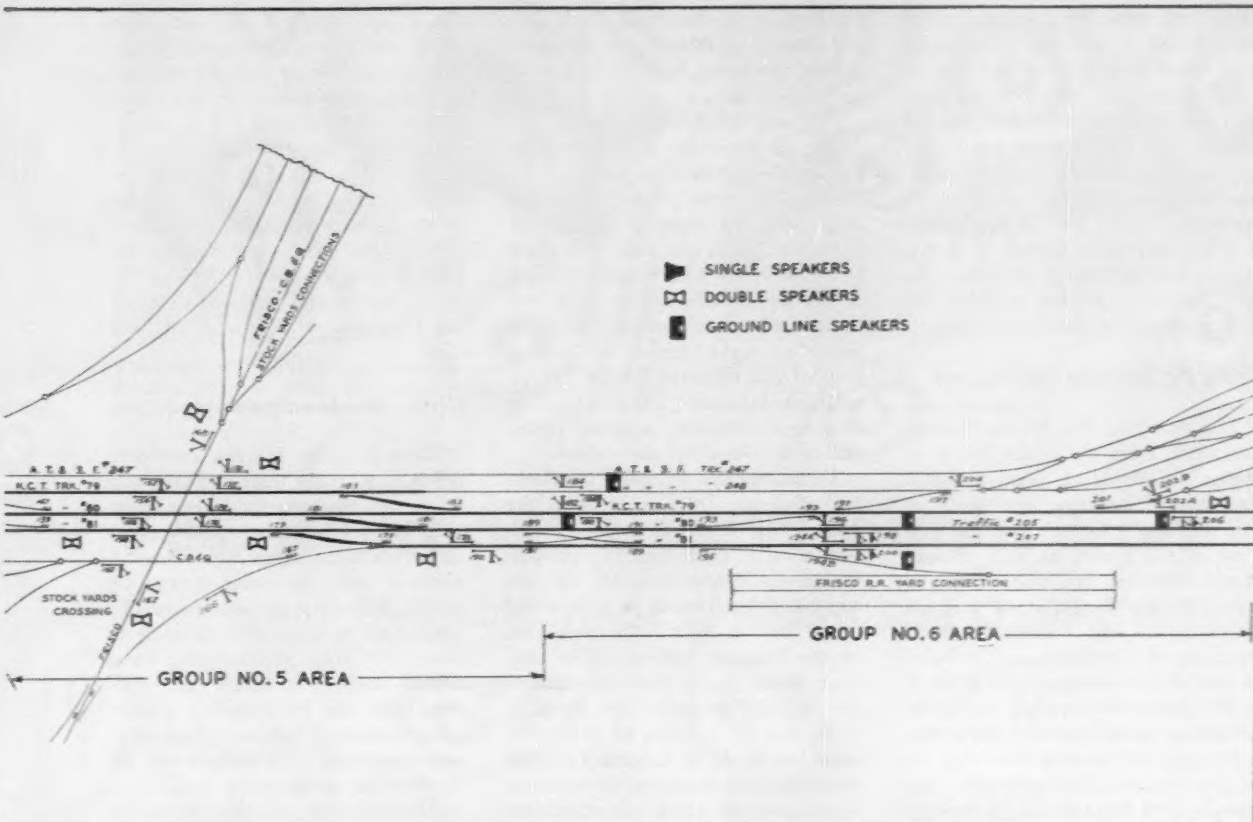
Most successful merchandisers of tangible products are particularly careful in harmonizing their advertising with their "direct sales" efforts. That is, they do not waste salesmen's time in doing jobs that advertising could do as well or better, for less expense. And they usually do not embark on large-scale advertising until they have a sales force deployed to "get the actual orders."



1. NEW TRACKS, NEW ARRANGEMENT →

How KCT Breaks a Bottleneck . . .

2. NEW TAILOR-MADE INTERLOCKING SYSTEM



SWITCHES AND SIGNALS shown dotted in this plan were part of the old No. 3 interlocking, and are now included in the new No. 3 interlocking. The entire six group areas are controlled from one machine in a new Tower No. 3.

Here's What's Happening

To insure reliable and prompt interchange movements, a major project, known as the three-main-track interchange, including important new interlockings and unique communication facilities, is now being pushed to completion in an extensive area on the Kansas City Terminal.

The Problem

A large percentage of the interchange movements between the 12 railroads which enter Kansas City must pass through the Kansas River valley from the Missouri river southwest for about 2.3 miles to the location of tower No. 3. This area includes yards of some of the roads, as well as numerous industries, large stock yards and packing plants. No through train movements are made in this area, all operations being switching moves to serve industries, and transfer moves to deliver cars to yards of various railroads.

All these moves were made on two non-signaled main tracks extending through this area. One group of switches, in the section called Chicago Junction (map), was operated by switch tenders, on duty 24 hours daily. The remainder of the switches were hand-thrown by switch crews.

The switching crews, when serving industries or making interchange deliveries, would enter and operate through this area "on sight." Conflicts caused unforeseen delays to transfer moves, which were intolerable in present-day railroading. For example, Union Pacific perishable trains arriving from the west at 5:30 a.m. include cars which must be delivered north of the Missouri river by 7 a.m. In too many instances the transfer crews encountered such delays that connections were missed. Other transfer moves, as well as deliveries to stock yards and industries, were similarly delayed.

The Solution

A primary step in relieving this situation was to provide increased track capacity by extending another main track, making three running

3. NEW COMMUNICATIONS ⟶

tracks throughout the 2.3 miles north from Tower 3 to a junction point from which some lines extend across the Missouri, and others extend east along the south bank of the river.

A second relief measure was to install signal protection and interlockings to include power operation of practically all the main track switches, and home signals to direct movements by signal indication to enter and keep moving in either direction on any of the three tracks.

Santa Fe Junction Interlocked

The previous No. 3 interlocking, controlled from old tower No. 3 as shown on the track plan, included the railroad crossing just north of this old tower and the two switches west of the tower, as well as four single switches, five crossovers and home signals southwest of this old tower, in the area marked Santa Fe junction, all of which is now included as part of the new interlocking No. 3.

The Santa Fe here has six tracks extending southwest, and the tracks extending off the lower part of the plan go about 1.2 miles to the Union Station, and on east through the city. Santa Fe trains to and from the west are routed over these tracks, a total of 28 passenger trains and about 24 freight trains passing through this junction daily. The new interlocking at Tower 3 now controls not only the Santa Fe junction and crossing, but also the main track switches throughout the territory northward for 7,850 ft. Beyond this interlocking, to the north, is a second area to be included in an interlocking now being built, to be known as Tower 2.

The new interlocking No. 3 includes an extensive area involving 48 single switches, 3 derails, 14 double slip ends, 8 movable-point frogs and 90 signals. Trains or switching moves can enter this plant at 30 different home signals. Most of the signals affect more than one route, and some signals govern as many as eight routes, so that a total of 205 different lineups can be established in this interlocking. In numerous instances, separate routes can be in use simultaneously.

To control this extensive interlocking efficiently from one tower, the Kansas City Terminal decided to install a "UR" route control push-button interlocking system. On the control panel, each track is represented by a "line of light." On each line, at the location corresponding with each home signal there is pushbutton which represents that signal.

To line up a route, all the towerman has to do is to push two buttons, the first representing the home signal for the track on which the train is approaching, and the second at the place on the diagram representing the track and location at which the train will depart from interlocking limits. An average of 524 conflicting moves are made in 24 hours.

Because of the complexity of this track layout, a route from one of the entering home signals to points within the interlocking, and vice versa—and in some instances the departure from the far end of interlocking limits—may include several intermediate home signals. For example, a route from entering home signal No. 92 to No.74 would also include interlocking signals Nos. 80 to 78. In such an instance, the towerman lines up the entire route by pushing only two buttons, 92 and 74. When the control is complete all three signals, 92, 80 and 78, will clear.

Using the Loudspeakers

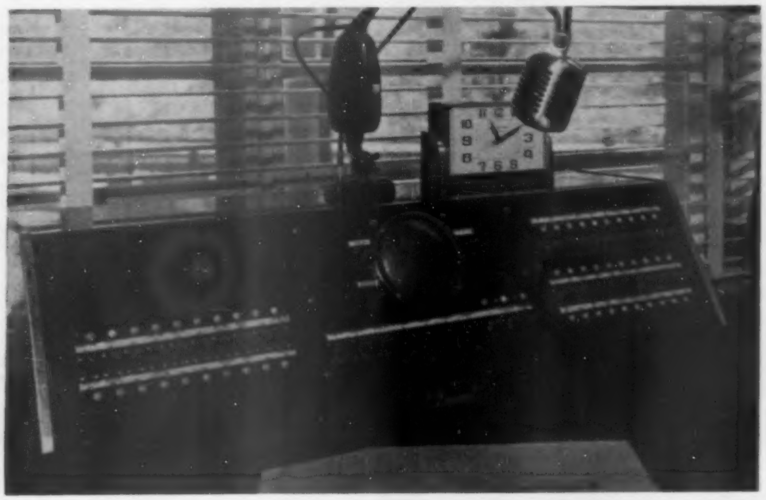
When planning the new interlocking with all main track switches and crossovers power operated, and every train and engine move to be authorized by a home signal, there was an obvious need for some means by which the towerman could know (1) when each switcher crew is ready to move; (2) from what entering home signal; and (3) to which exit. This need was met by installing a complete system of talk-back loudspeakers, connected to a console on the interlocking towerman's desk.

The talk-back speaker system is also used extensively by the signal maintainers when adjusting switch movements and testing relays. In most cases the maintainer can carry on a conversation with the tower operator without leaving the movement he is repairing. For group paging and answering, the loudspeakers are in six different groups.

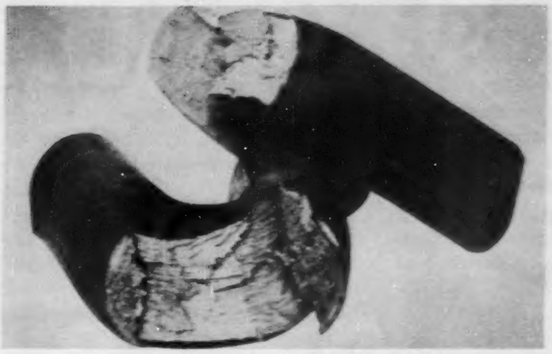
The project includes a total of 38 talk-back speakers at various places throughout the interlocking area, usually near home signals, or at other places along switch leads.

At 28 of these locations there is a pair of loudspeakers, one faced each way. Such a pair is mounted on a 3-in. pipe mast 8 ft high. Because of limited area between tracks at nine locations, there is no space for loudspeaker masts, and therefore, at these places, the loudspeakers are the so-called dwarf type.

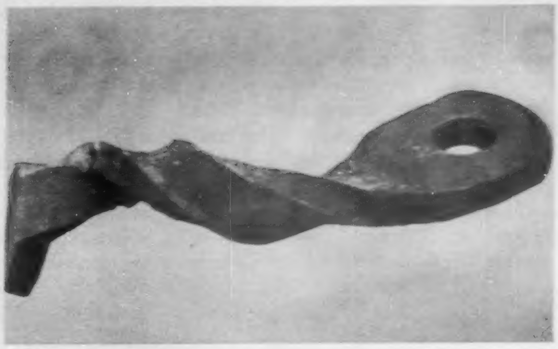
The major items of signals and interlocking equipment on this project were furnished by the Union Switch & Signal Division of Westinghouse Air Brake Company. The communications equipment, including the talk-back speakers and towerman's console, were furnished by the Electronic Communication Equipment Company.



COMMUNICATIONS CONSOLE on leverman's desk is connected to 38 talk-back loudspeakers at signals where trains enter interlocking limits.



FIBROUS STRUCTURE of wrought iron is demonstrated by this iron bar which was notched and twisted, but did not break through completely.



ABILITY OF WROUGHT IRON bar to withstand twisting is shown by drawbar which connected locomotive and tender involved in a derailment.

Yes, Railroads Use Wrought Iron

. . . AND TAKE ADVANTAGE OF ITS UNUSUAL CHARACTERISTICS

By a Former Railroad Engineer of Tests

A New England farmer, when asked about his apple crop, said "Well, my apples didn't do as well as I expected, but then I didn't think they would." This, in reverse, suggests a peculiar characteristic of wrought iron, one of the oldest of useful metals.

Modern engineers, especially those whose experience has been largely confined to the laboratory rather than the field of actual practice, have difficulty in reconciling some of the claims made for wrought iron which seems so at variance with what could reasonably be expected from a knowledge of the properties of this material as measured by tests.

The writer, who served for 12 years as engineer of tests for a major railroad—and, during the later years of that period, as vice-chairman of the Committee on Steel and chairman of the Committee on Wrought Iron of the American Society for Testing Materials—is not one to belittle the value of laboratory tests. His experience with wrought iron in actual service long ago convinced him that no laboratory test truly reveals the valuable properties of this material.

Wrought iron, perhaps because of its fibrous physical structure, has a remarkable ability to withstand vibration and repeated reversals of stress. The material consists of a highly refined iron in which fibers of iron silicate have been physically incorporated. These fibers are distributed evenly throughout the base material, and a cross-section of wrought iron would contain approximately 250,000 iron silicate fibers in each square inch. This is the property that is supposed to be revealed and measured by the standard laboratory endurance test for ferrous metals. That this test fails to do justice to wrought iron has been proved many times.

Road Tests the Proof

For example, some years ago the New York Central, which was constantly seeking a cheaper but equally satisfactory substitute for wrought iron for engine bolts, staybolts, and many other uses, selected three different brands of alloy steel which gave the best promise of meeting the requirements, based on laboratory test results. Test applications were made to 12 new steam locomotives, in groups of three. Groups A, B and C were equipped with alloy-steel bolts X, Y and Z, respectively, and group D with standard wrought-iron bolts. Records were kept of all bolt replacements through two shopping periods, an average of approximately 500,000 miles.

During this time each brand of alloy-steel bolts showed from 50 to 100 per cent more failures than the wrought-iron bolts. Instead of saving money on the original cost of application of the steel bolts as expected, the cost was higher because the locomotive builder demanded and received an "extra" of more than $200 per locomotive to cover the higher cost of machining and threading the steel bolts.

In another service test, six new locomotives were equipped with a highly recommended brand of alloy-steel staybolts. These steel bolts in laboratory tests showed substantially better physical properties in all respects than wrought-iron bolts. The test applications were carefully followed for more than two years along with six other locomotives of the same class built at the same time by the same builder, but equipped with wrought-iron bolts. At the conclusion of this test the alloy-steel staybolts showed no particular advantage or disadvantage insofar as breakage was concerned, but in the six locomotives equipped with alloy-steel staybolts, abnormally early renewal of firebox side sheets was required.

Since all 12 locomotives were operated in the same territory and used the same boiler waters with the same water treatment, the use of alloy-steel staybolts was held to be at least partly responsible for the short life

of the side sheets equipped with the bolts, especially since the six locomotives having steel staybolts had to have new side sheets before any locomotives having wrought-iron bolts required similar renewals. The conclusion was that the higher yield strength of the alloy steel, compared with wrought iron, was one of the factors that caused the cracks to start in the firebox sheets, due to lack of sufficient flexibility.

Twenty-six years ago the Committee on Wrought Iron of the ASTM began a study to find out why wrought iron so often gives much better service than might be expected from laboratory test results. Funds were not available to cover the cost of an exhaustive job of research, but records were found of the results of a similar investigation made in England some years before.

In that investigation, which included an extensive series of tests, it was found that wrought iron has, to a greater degree than steel, the ability to "recover" from effects of repeated stresses providing these stresses do not follow each other too quickly. This, it was concluded, was why laboratory endurance tests, usually made at high speed, do not correctly forecast the performance of wrought iron in actual service, where time intervals between damaging stresses are usually sufficient to allow time for "recovery" of the metal.

Wrought iron of course has limitations; it rightly has a reputation for toughness but not for high tensile strength. It cannot be made substantially stronger by heat treatment but withstands a great deal of punishment when cold worked. This is one reason why it is especially resistant to physical abuse.

Examples to match those given above might be cited also to show the ability of wrought iron to resist corrosion, and how misleading the results of accelerated corrosion tests can be.

Why is it that so many capable engineers, particularly younger engineers, know so little about wrought iron? I believe it to be due to the fact that instructors in most engineering colleges have no opportunity to obtain first hand experience with materials, except in a laboratory. Therefore, it is natural that they pay scant attention to a material which there gives unimpressive results.

Quoted below in part is AAR Interchange Rule P.C 2 (i) adopted in 1952 by letter ballot vote of 94 per cent for and 3 per cent votes against (3 per cent not voting):

> "Brake pipe on all passenger equipment cars built new on or after January 1, 1952, must be 1¼ in. size, extra heavy wrought iron. . . . Brake pipe branch pipe shall be 1 in. size, extra heavy wrought iron pipe."

Railroading After Hours

by James G. Lyne

Editor, Railway Age

Back to School

In San Francisco a couple of weeks ago I learned that the Southern Pacific, this year, will have approximately 100 of its officers and supervisors attending courses at colleges and universities—all at company expense, and with their salaries at their regular jobs being continued.

President D. J. Russell explained this program to me as an effort by the railroad to give "some of the able men in the service of our company a greater opportunity to broaden their understanding of the kind of world we're living and doing business in.

"We believe this program is a sound investment in the future of our company," he said. The men being given this opportunity "are those who have already demonstrated their initiative and ability as well as their interest in the railroad."

He went on to point out that the company is particularly desirous that the men being given these educational opportunities should get better acquainted with people in other businesses. For example, in the transportation course at Leland Stanford which is being started this summer and which the SP is sponsoring (Railway Age, March 19, p. 8), Mr. Russell emphasized the fact that the course is not being run exclusively for railroad men; and that the railroaders who attend will intermingle with representatives of competing forms of transportation.

This educational program is not an innovation. It represents merely the intensification of a policy which has been in the course of development by Southern Pacific for a number of years.

The SP had a conference of some 250 of its Pacific system officers and supervisors in progress while I was in San Francisco, and I was privileged to look in on it briefly. The discussion was centered on "motivation," with special reference, at this particular conference, to attainment of improved safety performance. All in all, I'd suspect it would be pretty hard to find a company, outside or inside the railroad business, which is devoting more attention than the SP to providing opportunities for its personnel to improve their general knowledge and understanding, for the kind of work they are doing.

Discussion Leader's Booklet

Incidentally, Hob Ferguson, the "outside" consultant who has in recent years done so much work for the SP in its systemwide "human relations" activities among employees and supervisors, has just authored an excellent little handbook of 64 pages, entitled "How to Develop Teamwork Through Discussion." He gave me a copy which I have read with interest and profit.

It makes a more detailed companion piece to the article we published in Railway Age of April 30 by George N. Daffern of the CNR on "How to Run a Conference." The Ferguson booklet is published by the Dartnell Corporation, Chicago 40, Ill.

"Railvan" Marries Road and Rail

The Chesapeake & Ohio's "Railvan" —an hermaphrodite vehicle which runs on rails and on the highway with equal facility (Railway Age, February 27, page 8)—has reached a stage of development where extensive service tests have shown that the vehicle will give freight a safe and fast ride—whether behind a highway tractor or in trains on the rails. Kenneth A. Browne, director of research, emphasizes, however, that there are a number of ideas yet to be worked out on Railvan and that the two vehicles shown publicly for the first time at the railroad's annual stockholders' meeting in Richmond, Va., on April 26, are experimental prototypes in the development.

A New Vehicle

At a superficial glance, Railvan looks like an ordinary modern highway semi-trailer with what appears to be an extra dolly hung from the body behind the highway wheels at the rear. Actually, Railvan is a completely new type of vehicle which incorporates a center sill, two bolsters, and the strength requirements of a railroad car, together with the superstructure design, fifth wheel and braking system which characterize a highway vehicle.

Economics of Railvan have been researched and developed by the C&O in the search to find a vehicle which will provide the inherent low cost of long haul by rail and the flexibility of the truck for terminal distribution.

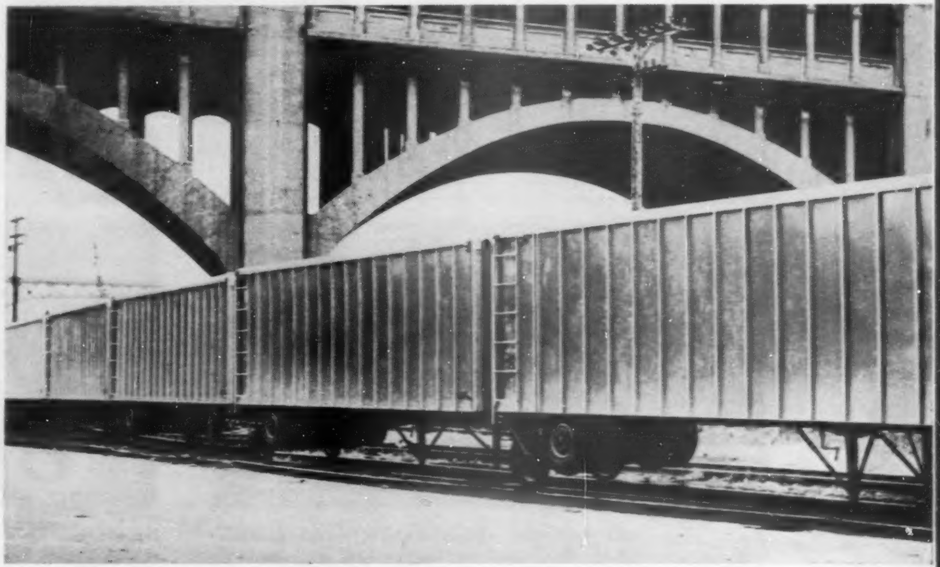
While conventional piggyback provides the physical means of attaining these goals, it involves the movement of one vehicle atop another in transit over the railroad. In ordinary TOFC, three tons of dead weight (including the weight of the locomotive) must be carried for each ton of lading, on the average, according to the C&O. Railvan, by comparison, with a load of 7 tons, produces a tare-load ratio of 1 to 1.

Unlike most hermaphrodite vehicles developed in the past for combination railway-highway service, Railvan is designed to couple in

IN TERMINAL AREAS . . .

. . . Railvan is fifth-wheeled by a conventional truck-tractor, for which service it is equipped with standard brakes and lights. On the highway, speed is limited only by legal restrictions and tractor power.

FOR THE LONG PULL . . .



. . . hermaphrodite vehicle couples into trains, braked by standard railroad air, and capable of conventional freight train speeds.

trains—up to 150 units—for economical movement on the rails.

Its designers say Railvan successfully meets the following requirements:

(1) It incorporates the highway vehicle safety specifications of the ICC.

(2) It has a separate set of wheels for railroad service and another for highway service.

(3) It can be transferred quickly from highway to rail operation, and the reverse.

(4) It has a special type coupler for movement in trains and has built into it a buff element comparable to the railroad car center sill.

(5) It is equipped with a railroad air brake system operated from a conventional source.

(6) It combines lightness of weight and strength of structure.

Railvan meets all ICC safety specifications with regard to highway movement—such as lights and reflectors. It has also ladders on both sides on the rear end and a running board on the roof. While these attachments do not entirely meet ICC rules for safety devices, Mr. Browne believes either that (1) Railvan can gain acceptance as a new type of vehicle justifying minor departures from standard fitments or (2) by the attachment of movable parts, end ladders and grab irons required to meet ICC standards can be provided.

In revenue service Railvan could be operated in a number of ways. The C&O thinks the general pattern of operation will comprise:

(1) *pick up of the van by ordinary truck tractor from shippers' loading docks;*

(2) *parking of the vans diagonally in a line along an assembly track in the railroad terminal yard;*

(3) *assembly of the vans into railroad trains.*

A terminal crew—using a "spotter" or special transfer vehicle described below—hauls each van from the parking area; spots the van over the rails on the assigned outbound tracks; lowers its railroad wheels onto the track; adjusts the wheel suspension to align with the coupler on the front of the leading van; backs into it to engage the couplers; then further raises the vehicle to normal running height, whence the leading van's front dolly wheels can be retracted. The spotter then drops the last van's landing gear to the rails, disconnects, and departs for the next van.

This procedure continues for all vans in the group—building up a train from rear to front. An adapter truck is then coupled to the leading van in the train, to which a locomotive with standard couplers can be attached.

It is envisaged that Railvans would be operated in solid trains and not mixed with other equipment. Preliminary tests indicate that it would be entirely feasible to run trains of at least 150 Railvans; their strength and tracking ability would permit trains of 200 cars.

IMPORTANT STATISTICS OF RAILVAN

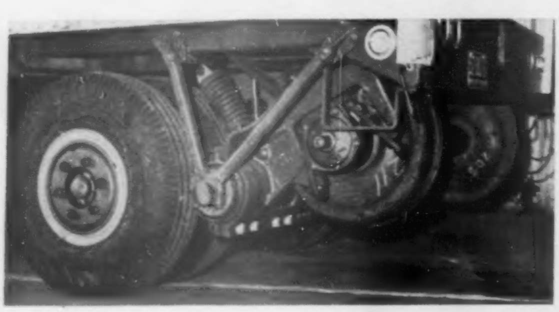
Length of body	**26 ft 4 9/16 in.**
Length overall	**29 ft 3 1/2 in.**
Outside width	**8 ft**
Highway clearance	**12 ft 3 in.**
Rail clearance	**11 ft 7 in.**
Floor height	
Highway	**51 in.**
Rail	**43 in.**
Coupler height rail	**37 5/8 in.**
Rail wheel	**24 in.**
Highway wheel	**10.00-15**
Weight empty	**10,500 lb**
Weight loaded	**38,000 lb max.**
Load capacity	**27,500 lb max.**
Design tire load	**22,000 lb**

Nominal load capacity of the Railvan is 10 tons. Actually, in rail service, it will carry up to 14 tons. The real limit on load, therefore, is imposed not by the railroad service, but on the highways to comply with city and state weight regulations.

The underframe of Railvan comprises a tubular center sill on which are assembled crossbearers and front and rear bolsters. The center sill is attached to the rear coupler only and can deflect in the rest of the structure producing one half-inch compression under buff load of 300,000 lb.

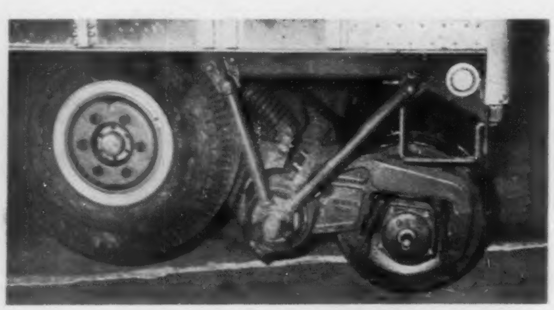
Materials for Railvan were selected to achieve high strength yet low weight. The underframe is low alloy, high-strength steel, while the body is made of aluminum-silicon-magnesium alloy. The sides use the outside stake principle for simplicity of connection to underframe. The inside skin acts both as a strength member

FOR HIGHWAY SERVICE . . .



Arms supporting highway wheels (above) and railroad wheels (opposite) are attached to springs. By hanging highway arm on this spring, the railroad wheels can be moved to provide necessary clearance between the rail and the tires. It can adjust to loading dock height.

FOR MOVEMENT ON RAILS . . .



By controlling length of highway and rail arms, the same spring deflection is achieved for rail as for highway operation. Air motor which changes wheels also raises or lowers body to give equal coupler height for rail movement, regardless of weight of lading.

SUSPENSION IS THE REAL KEY

"The real key to the design of the Railvan," according to the C&O's research department, "is its method of suspension." To make Railvan practical, its developers had to devise a means by which the different heights required by rail and road service could be attained simply and at the same time adjust to varying weights of lading.

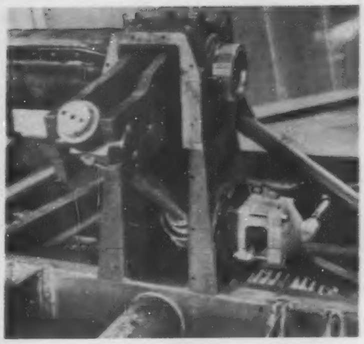
The arms supporting both highway wheels and rail wheels are attached to the outer casing of a B. F. Goodrich "torsilastic" spring. This comprises a rubber tube vulcanized to an inner, stationary tube and a movable outer sleeve—thereby providing elasticity by deflection of the rubber. In this design, which provides control of the length of highway and rail arms, the same spring deflection is achieved by both highway and rail operation. Furthermore, by hinging the highway arm on the spring, the railroad wheels can be moved to provide the necessary clearance between the rail and the tires.

The inner or stationary elements of the torsilastic springs are connected through a splined sleeve and an arm to the actuator screw — driven through a gear train by an air motor.

The air motor, operating on conventional railroad 90-psi air brake pressure, "twists" the spring and transfers the van from highway to rail position or back in about 30 seconds. Into the motor there is built a locking device which can fix the suspension system in any position. A scale and pointer show the operator when the van is in a proper height for coupling in rail service.

Thus the transfer operation not only lowers and retracts the wheels, but also operates to level the vehicle, both in relation to the vans in the train in rail service and in relation to loading docks used in highway service.

The designers of Railvan faced a clearance problem—namely, to find a place to store the highway wheels when the van is in rail service. They solved it by installing 10.00-15 "Low Boy" type tires.



To change wheels, air motor drives actuator screw through a gear train. Latter is connected through splined sleeve and arm to "torsilastic" springs.

and as an inside lining of the body. The floor, made of aluminum extrusion, is also what is described as "a sheer diaphragm."

Railvan has two completely separate braking systems. That used in highway service is the type conventionally used in over-the-road highway tractor-trailer rigs with hose air brake and control connections between the semi-trailer and the tractor.

For movement in railroad service, Railvan is equipped with brakes working off conventional railroad train brake pressures and controls. The actual application of braking power to the rail wheels, however, is designed on a new principle by which the brakes are kept applied by a spring and released only when air pressure is built up in the train line and compresses the spring. Thus, when Railvans are on a track and left by the locomotive, they are fully braked automatically, since the normal position of the brake is "applied." This obviates the necessity for hand brakes, which are not provided on Railvan as presently designed.

The brake cylinders, one for each wheel, are part of the brake beam, which contains a composition brake shoe and slack adjusters. The brake beam is hung from the rail arms, with the brake piston connected to the coil spring housing.

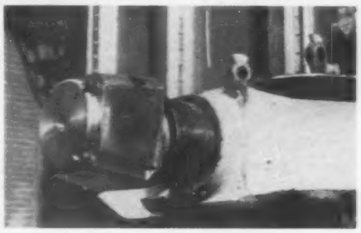
For highway service, as noted, Railvan is equipped with a conventional fifth wheel.

For railroad service, Railvan is equipped with a specially designed coupler of the male-female type capable of supporting the vertical load, since each van is equipped with only one pair of wheels. The male portion of the coupler is attached to the center sill at the front of the vehicle, while the female portion is welded into the rear bolster.

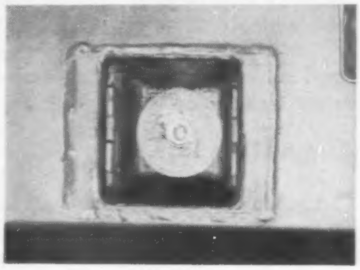
The coupler is completely automatic, engaging on impact, and disengaged from the side of the vehicle through a conventional coupling lever. The center of the coupler contains the air-brake line which is connected or unconnected automatically. In railroad running position, the coupler on Railvan rises 37 inches above the rail—3 inches higher than standard coupler height for freight cars.

The C&O has under development a special transfer vehicle for moving Railvans between parking areas and tracks and for assembling them in trains. It picks up hydraulically the front of a van, moves it to the track, shifts the wheels from road to rail and couples up—all within two minutes. This spotter moves and spots the Railvan through the railroad coupler, rather than on the fifth wheel, and consequently automatically connects by trainline air, since the mechanism which transfers the wheels is actuated thereby. The spotter is kept coupled until the changeover has been made. Although an ordinary highway tractor can be used to transfer Railvans, yard air must be used to operate the wheel mechanism and the van's landing gear must be adjusted to allow for a difference of 14 inches between rail and highway positions.

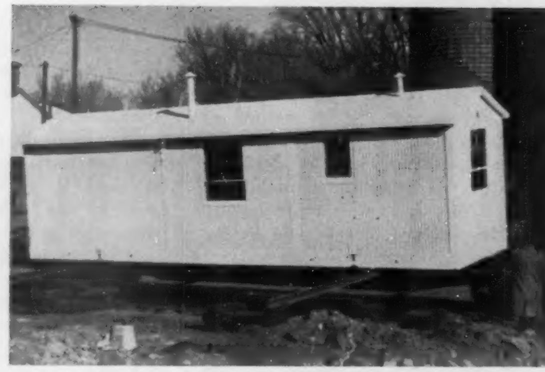
COUPLING DEVICE



Male portion of automatic coupler (above) is attached to center sill at the front of Railvan. Coupler engages on impact and is released by brakeman from side of van with conventional uncoupling lever. Female part (below) is welded into rear bolster. Center hole is part of train brake pipe system which is connected automatically when coupler engages.



LOADED and ready for shipment. The buildings are designed so as not to present close clearance hazards when moving over the road.



UNLOADING is usually accomplished by sliding the structure on skid rails from the flat car to a point directly over foundation. Jacks are used to lower it into place.

ON THE ROCK ISLAND . . .

Depots That Travel by Rail

Prebuilt stations of standard design, carried "piggy-back" from the manufacturer's plant to the building site, are providing modern and attractive facilities at smaller communities on the line

Passenger stations that can be picked up and moved bodily from one location to another are going into service on the Rock Island. They are the road's answer to the need for low-cost stations that can easily be moved elsewhere if there is no longer need for them at the original location.

Present-day trends in rail traffic have convinced the Rock Island that the expense of remodeling existing stations at many locations is not warranted, nor is it practical to maintain them in first-class shape when they are not being fully utilized. At the same time it is recognized that some sort of building is needed that will satisfy the requirements for a small station and yet be inexpensive to erect and maintain.

Portable but Permanent

A requirement imposed by the management of the road was that such a building should be portable and yet provide most of the qualities of a permanent structure. The stipulation of portability was made with the thought in mind that should it be necessary to abandon the station at some future date, a minimum expense would be involved in moving and relocating the building.

In addition, the cost of new construction at another location would be saved.

The needs of a typical small wayside station were then analyzed. Results of the analysis were given to the road's building engineers to be fused into a plan for a single, more or less standard building suitable for almost any location on the road.

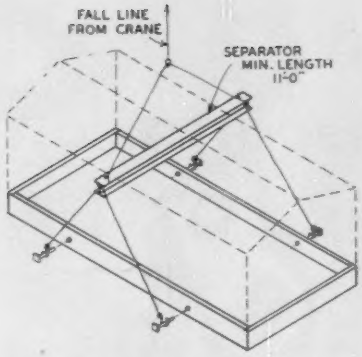
Through the joint efforts of T. J. Engle, engineer of buildings, and W. C. Humphreys, engineer-architect, working under direction of W. B. Throckmorton, chief engineer, a design was developed for a basic structure 10 ft wide. Without a toilet the length is 30 ft. When a toilet is installed, overall length becomes 35 ft (see floor plan). By limiting the width to 10 ft it is possible to load the buildings on flat cars for shipment without causing close clearance hazards.

Stations built to date have been manufactured by the Star Manufacturing Company in its plant at Oklahoma City, Okla.

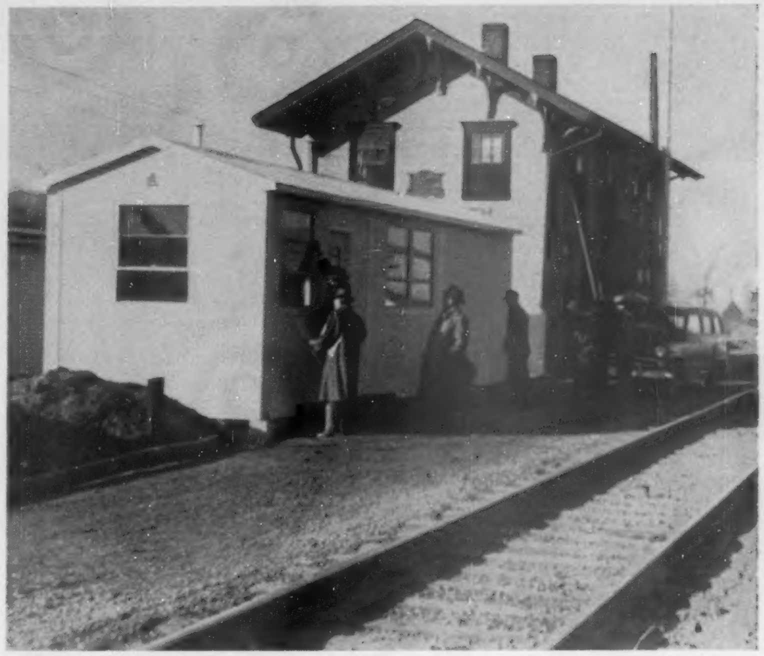
Built Mostly of Steel

The design calls for the building to be constructed on a welded frame of steel channels within which the wood floor joists and flooring are securely fastened. Walls of the building are approximately 4 in. thick, with exterior surfaces of corrugated galvanized metal sheets. Interior surfaces of walls in the office and waiting room are finished with fir plywood, while the ceiling is of flat metal sheets.

For comfort and economy, walls of these rooms are insulated with double-faced aluminum foil, and blankets of glass fiber are used to insulate the floor and ceiling. The freight and baggage room is not insulated but the walls are protected from possible baggage-truck damage by a plywood wainscot 4 ft high. Window sash and doors are of steel with the exception of the overhead



SPECIAL SLING, attached to base frame with bolts, can be used for loading and unloading building with a crane.



NEW DEPOT, contrasting strongly with the old, will be an attractive addition to this small community and will more efficiently serve its needs. Old structure will be torn down.

freighthouse service door which is made of wood.

Most of the permanent fixtures, such as the electrical wiring, ticket counter, telegrapher's desk and waiting-room benches, are installed by the manufacturer. Before leaving the plant, the outside of each building is given two coats of cement-base paint. Interior walls above the dado are given two coats of light green paint and the dado, doors, sash and trim are painted with medium green enamel. Thus, very little, if any, work remains to be done on each building at the installation site.

A Crane Can Unload It

Design of the building is such that, if desired, a crane may be used to lift it to and from a flat car. To make this possible, two holes are provided on each side of the base frame. When heavy bolts are inserted into these holes, a specially designed sling (see sketch), can be attached so the unit can be handled by a single fall line.

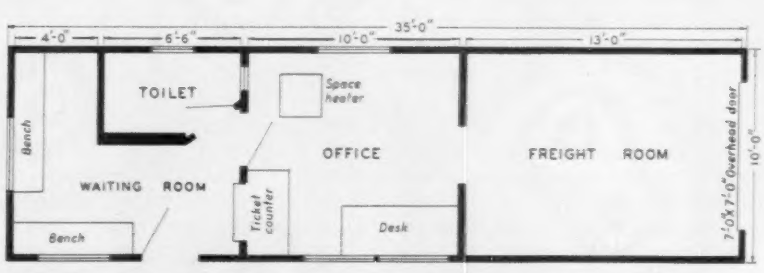
In another method of unloading—the one most generally used—the car carrying the station is spotted directly opposite the foundation which has been previously prepared. Skid rails, supported by timber cribbing, are placed at the car level, and the building is shifted from the car onto the rails and skidded to a position directly above its foundation. It is then lowered into place with jacks.

All that remains to be done is to connect electrical and telegraph wiring, tie into the water and sewer connections and install toilet fixtures if required, grade around the building and install the heating unit. The office and waiting-room portions are usually heated by either an oil or gas space heater depending on which type of fuel is most readily available.

Foundations Prebuilt Too

The Rock Island places this portable building on a series of precast concrete pedestals or piers instead of a poured concrete footing and bearing wall. This type of foundation is used to keep construction costs to a minimum.

In the past year, the road has placed six of the buildings at various locations. Units equipped with toilet facilities were installed at West Branch, Iowa, and Grundy Center, White City, Kan., and Groom, Tex. One 10-ft by 30-ft unit was placed at Chesterfield, Mo., and another at Buckeye, Iowa. A building incorporating a variation of the basic design was installed at Howe, Okla. This building is the same as the basic design, except that it is 53 ft long. It serves as a joint facility with the Kansas City Southern and it was needed to provide space to house interlocking equipment and for handling transfer mail and express.



FLOOR PLAN may include a toilet, but if one is not provided the size of waiting room is reduced and the overall length becomes 30 ft.

FREIGHT AGENTS ASK CONGRESS TO ALLOW . . .

Rate Competition in Transportation

Prompt congressional action on legislation to effect free competition among transport media was urged in a resolution adopted at the April 24-26 annual meeting in Cleveland of the Freight Station Section of the Association of American Railroads.

The resolution also asked Congress to relieve all forms of transportation of the obligation to restrain their rate reductions to protect the rates and business of their competitors.

Almost 800 railroad men and their wives, from all 48 states and Canada, attended the convention. Principal speakers were Felix S. Hales, president, New York, Chicago & St. Louis; R. G. May, AAR vice-president; W. G. Miller, superintendent of clerical operations-systems, Pennsylvania; C. A. Naffziger, director, Freight Loss and Damage Prevention Section, AAR; and G. H. Hill, director of the Freight Station Section.

"All railroads have public relations departments these days," Mr. Hales said, "and they work to promote good will and favorable public opinion for the roads. But, actually, what the public thinks of a railroad depends on the public's experiences with that railroad. Their experiences, good or bad, frequently are the result of agents' able or indifferent efforts. It seems to me, therefore, that we might properly call local agents 'the first line of public relations.' "

Mr. May, discussing car shortages and the clean-car situation, said:

"We could have loaded 969,949 more cars during 1955 with the same serviceable ownership—IF consignees had cleaned all debris from cars at the time they were unloaded. Estimated cost of cleaning cars during 1955 was $110 million."

Mr. Naffziger reported that in 1955, loss and damage claim payments totaled $98,003,641, 4.7% under the $102,877,457, paid in 1954. "New claims from the public totaled 3,243,263," he continued, "an increase of 2.1%, compared with the 3,177,084 received in 1954. The suspense account amounted to $10,527,355 at the end of 1955, an increase of 2.5%, while the ratio of loss and damage claim payments to freight revenue decreased from 1.25 in '54 to 1.10 in '55."

The section will hold its 1957 annual meeting in St. Louis, April 30 and May 1 and 2.

"What We Need Is Incentive"

One central theme—the need for incentives as a basis for successful accomplishments—ran through the three principal addresses delivered to the joint conventions, at Memphis April 22-25, of the American Railway Development Association and the Railway Development Association of the Southeast.

The speakers who emphasized this basic idea, at times in strikingly similar language, were Charles B. Shuman, president of the American Farm Bureau; Clement D. Johnston, chairman of the board of the U.S. Chamber of Commerce; and Walter G. Barlow, vice-president of Opinion Research Corporation.

"Incentive is the essential ingredient in making the system of free enterprise work," said Mr. Shuman, "but as the percentage of national income going to government increases, the incentive to get ahead decreases." "There seems to be no limit to the appetite for handouts at public expense," declared Mr. Johnston. Business, Mr. Barlow pointed out, "wants and needs, among other things, a system that will make incentive work." That, he said, needs "personalized leadership."

Mr. Johnston pointed out, however, that there is "no limit to the heights to which America can rise if we stop childish bickering about who is going to get the biggest piece of pie, and devote ourselves to making the pie so big we can all get a good slice."

"Make no little plans," he told the railway development men, adding that: "Man for man, no other group has more influence in shaping the future of America."

Both Groups Elect Officers—D. M. Lynn, Cleveland, assistant vice-president of industrial development of the Erie, was elected president of the ARDA to succeed P. R. Farlow, Chicago, general agricultural and forestry agent of the Illinois Central. E. E. Exon, real estate and tax agent of the New York Central at Cincinnati, was moved up from second vice-president to first; F. E. Wolff, general agricultural agent of the Canadian Pacific at Toronto, was advanced from secretary-treasurer to second vice-president; and F. B. Stratton, San Francisco, director of industrial development of the Western Pacific, was elected secretary-treasurer.

The RDAS elected as its new president W. O. Harper, Atmore, Ala., agricultural agent of the Frisco. He succeeds J. E. Saucier, Atlanta, assistant general development and real estate agent of the Atlanta & West Point and the Georgia. Other officers are E. M. Nix, Jacksonville, agricultural agent, Seaboard Air Line, first vice-president; R. P. Keithley, Roanoke, Va., industrial and agricultural agent, Norfolk & Western, second vice-president; and J. R. Glynn, Mobile, general industrial agent, Gulf, Mobile & Ohio, secretary-treasurer.

The ARDA voted to hold its 1957 meeting at the Schroeder Hotel in Milwaukee, May 12-15.

G.T.M. Per Wage Dollar Down Sharply

Each dollar railroads paid their employees in 1955 bought 44.3% fewer gross ton-miles than each dollar of compensation paid in 1939.

That was shown in "Transport Economics," publication of the ICC's Bureau of Transport Economics and Statistics. In 1955, the output of gross ton-miles per employee dollar of compensation was 326. The comparable figure for 1939 was 585.

The 1955 figure, however, was higher than any of those of the four preceding years, which ranged from 1951's 319 to 1953's 304. Top figure of the 1939-1955 period was 1941's 606.

Meanwhile, the gross ton-miles per employee hour paid for were 48.4% higher in 1955 than in 1939, thus reflecting the trend of gross ton-miles, which were up 49.3%. Average compensation per hour (including all time paid for) was up 166.4%—from 1939's 74.9 cents to 1955's \$1.99½.

How Rate Hike Hit Commodity Groups

The Ex Parte 196 freight-rate increase amounted to 6% on manufactures and miscellaneous, forwarder traffic and l.c.l., 5.8% on products of forests, 5.2% on animals and products, and 4.9% on products of agriculture and mines. Overall average increase was 5.5%.

These figures were given by the ICC's Bureau of Transport Economics and Statistics in its "Transport Economics." The bureau also released the accompanying table showing rate increases by commodity groups since June 30, 1946. It noted that the estimates reflect gross freight revenues before adjustments and they assume that intrastate rates have been increased on the same basis as interstate rates.

ESTIMATED AVERAGE PERCENTAGE INCREASES IN FREIGHT RATES AUTHORIZED SINCE JUNE 30, 1946

	Commodity group	United States*	Eastern district	Pocahontas region	Southern region	Western district*
I	Products of agriculture	74.8	80.5	82.8	78.8	72.0
II	Animals and products	94.1	100.7	101.0	95.2	88.3
III	Products of mines	69.2	71.1	68.8	71.4	64.1
IV	Products of forests	94.1	99.4	99.7	100.2	90.3
V & VI	Manufactures and miscellaneous, including forwarder traffic ...	100.1	109.1	108.7	98.1	91.3
VII	Less-carload traffic	103.1	111.9	111.9	100.5	92.5
	Total, all commodities	88.8	93.4	85.2	89.6	83.4

*Does not include effects of extra authorizations for Western trunk-line Zone I except as shown on last line.

Traffic "Share" Data Revised by ICC

The ICC's Bureau of Transport Economics and Statistics has revised the tabulations and chart it has issued from time to time to show how intercity freight traffic has been "shared" by various agencies of transportation since 1939.

The revision is Statement No. 568 of the bureau. It does not change the 1954 figures, released previously, which showed that the railroads' share of that year's intercity ton-miles was 49.5%, the first time in which their share was less than 50% (Railway Age, Oct. 24, 1955, p. 15).

The revision involved principally the motor carrier figures, although there were some changes in the water carrier data. As to motor carrier data, the bureau noted that variations between the new and old series range from a slight difference in 1940 to an increase of around 10 billion ton-miles for 1943.

Abandonment Threat Gets Action

The Interstate Commerce Commission's action in authorizing abandonment of the line involved has prompted the Wisconsin Public Service Commission to allow the Milwaukee to discontinue unprofitable passenger operations and thus justify keeping the road's line in service for freight; this was the case in which the ICC found a way to override state authorities which refuse to permit curtailment of unprofitable services (Railway Age, Mar. 12, p. 5). The line involved extends from Heafford Junction, Wis., to Woodruff. Its freight business was profitable, but not profitable enough to offset losses on passenger services which the Wisconsin commission insisted upon.

The ICC's line-abandonment authorization resulted in the Wisconsin commission's reconsideration and grant of permission to drop the passenger operations. Thus the Milwaukee has asked the ICC to vacate the abandonment certificate.

Traffic Men Try for \$1,000 Prize in KO&G Contest

A \$1,000 cash prize has been offered by the Kansas, Oklahoma & Gulf and its affiliates for the slogan that "best describes the services of our railroads." KO&G affiliates are the Midland Valley and the Oklahoma City-Ada-Atoka.

Eligible to compete are shippers, traffic men, and anyone who has anything to do with scheduling or routing freight. Contestants are urged to submit slogans of not more than five words. Entries, which must be postmarked before May 31, 1956, should be adressed to the KO&G Railway, Box 1447, Muskogee, Okla.

Competitive Pricing Seen Answer to Traffic Losses

Competitive pricing by railroads is the means of halting inroads made by truckers into traffic volume, the Boston Society of Security Analysts was told May 7 by R. E. Thomas, executive committee chairman of the Missouri-Kansas-Texas.

Change to such practices "is coming eventually," he declared, and "will be hurried along" with adoption of the Cabinet Committee's recommendations for greater competitive freedom.

Mr. Thomas who is also vice-president of Pennroad Corporation, noted, however, that he feels loss of tonnage to competitive forms of transport has "on a relative basis, just about reached a maximum." He predicted that railroads will hold at least the present share of approximately half the available business.

Air Travel Hazards Far Greater than Rail

Travel on regularly scheduled domestic air lines in 1955 was more than 14 times more hazardous than travel by rail.

The railroads' fatality rate was 0.67 passengers killed per billion passenger-miles. The air lines' rate was 9.49 per billion passenger miles, including the 39 passengers killed in the sabotage accident at Longmont, Colo., which resulted from a bomb explosion. ICC figures on which railroad passenger-fatality rates are based include deaths in accidents attributed to sabotage.

The Civil Aeronautics Board, however, eliminated the Longmont accident from its 1955 figures for air lines. On that basis, the air lines' rate became 7.6 per billion passenger-miles, which would make them about 11½ times more hazardous last year than railroads. The comparative figures were presented by the ICC's Bureau of Transport Economics and Statistics in its "Transport Economics," which showed the 7.6 figure in the regular 1955 spot and carried the 9.49 rate in a footnote.

Fire Damages 650 Ft of SP's Salt Lake Trestle

Preliminary reports indicate burning waste from a hot box caused the May 4 fire which damaged 650 ft of wooden trestle on the Southern Pacific's Lucin cutoff across the Great Salt Lake, Utah.

The fire caused an estimated $300,000 damage to the structure. SP is currently replacing the wooden trestle, built in 1904, with a 13-mile fill (Railway Age, Mar. 19, p. 9).

SP expected to have the damaged trestle back in service over the past weekend.

Shippers Face Increase In Demurrage Charges

Changes in car demurrage rules and charges proposed by the Association of American Railroads were the subject of public hearings in Chicago last week.

Proposed changes would increase demurrage charges and reduce some "free time" allotments. For example, a shipper holding a car for five days beyond the free time allotment now pays $18. If the proposed changes are put into effect, he would pay $32. Railroads hope the new rules will help increase the car supply by accelerating car turn-around time and prevent use of rail equipment for storage.

One shipper objected to what he called "penalization by railroads for a car shortage for which railroads are to blame." He said "railroads have been retiring old cars faster than they have been building new ones." Another shipper testified that a great deal of the car shortage problem would be eliminated "if railroads made an effort to keep schedules" and thereby prevent car bunching.

Financial

Atchison, Topeka & Santa Fe. —*Stock Split Approved.*—A five-for-one split of common and preferred stocks to be effective August 1, subject to ICC approval, was approved by stockholders at the annual meeting April 26. They also approved an incentive stock option plan for officers and key employees and voted these changes in the company's charter: increased directorships from 15 to 17, changed par value of common and preferred shares from $50 to $10 to facilitate the split, and terminated stockholders' pre-emptive rights on 200,000 shares of authorized but unissued common stock in setting up the stock option plan.

Canadian Pacific. — *Capital Needs of Expansion Program.*—About $60,000,000 a year to finance average capital needs of the proposed 15-year $1,500,000,000 expansion program (see Railway Market, p. 9), will be available from depreciation accruals and salvage proceeds, N. R. Crump, CPR president, told recent shareholders' meeting. Although the average annual balance of $40,000,000 might be financed partly from retained earnings, it will be necessary to obtain new money for the remainder. At some stage in the program, Mr. Crump said, equity financing will become necessary.

Missouri - Kansas - Texas.—*Enlarged Executive Committee.* — The board of directors has voted to enlarge the executive committee and elected Robert E. Thomas as committee chairman. Mr. Thomas has headed the board's finance committee, which was abolished. He is a vice-president of the Pennroad Corporation, which, with State Street Investment Corporation and Bear, Stearns & Company, last year acquired a majority interest in the Katy's common stock.

Applications

BALTIMORE & OHIO.—To assume liability for $3,600,000 of equipment trust certificates, third installment of a proposed $14,700,000 issue, which will finance in part the purchase of freight cars costing an estimated $18,467,500 (Railway Age, Nov. 28, 1955, p. 40). Dated January 1, the certificates would mature in 15 annual installments of $240,000 each, beginning January 1, 1957. They would be sold by competitive bids which would fix the interest rate.

NEW YORK, CHICAGO & ST. LOUIS.—To assume liability for $4,620,000 of equipment trust certificates to finance in part the purchase of 500 box cars from General American Transportation Corporation, and six 1,750-hp diesel-electric units from Electro-Motive Division, General Motors Corporation. Esitimated unit cost of 400 of the box cars is $9,039, while the other hundred, to be equipped with DF loaders, would cost $11,014 each. Four locomotives are expected to cost $179,234 each, and the estimated unit cost of the other two is $185,514. The certificates would mature in 30 semiannual installments of $154,000 each, beginning December 1. They would be sold by competitive bids which would fix the interest rate.

Dividends Declared

CHESAPEAKE & OHIO.—common, 87½¢, quarterly, payable June 20 to holders of record June 1; 3½% convertible preferred, 87½¢, quarterly, payable August 1 to holders of record July 6.

CHICAGO, BURLINGTON & QUINCY.—$2, payable June 22 to holders of record June 5.

CHICAGO SOUTH SHORE & SOUTH BEND.—15¢, quarterly, payable June 15 to holders of record June 5.

DELAWARE.—$1, semiannual, payable July 2 to holders of record June 15.

GULF, MOBILE & OHIO.—common, 50¢, quarterly, payable June 11 to holders of record May 21; $5 preferred, $1.25, quarterly, payable December 17 to holders of record November 26.

MAINE CENTRAL.—5% preferred, $1.25, accumulated, payable June 1 to holders of record May 16.

MOBILE & BIRMINGHAM.—4% preferred, $2, semiannual, payable July 1 to holders of record June 1.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—$1, quarterly, payable June 1 to holders of record May 8.

NORFOLK & WESTERN.—75¢, quarterly, payable June 8 to holders of record May 10.

NORTHERN CENTRAL.—$2, semiannual, payable July 16 to holders of record June 29.

NORTHERN PACIFIC.—new common, 45¢, initial, payable July 26 to holders of record July 6.

PITTSBURGH, FT. WAYNE & CHICAGO.—common, $1.75, quarterly, payable July 2 to holders of record June 8; 7% preferred, $1.75, quarterly, payable July 3 to holders of record June 8.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% preferred, $1.75, quarterly, payable June 1 to holders of record May 18.

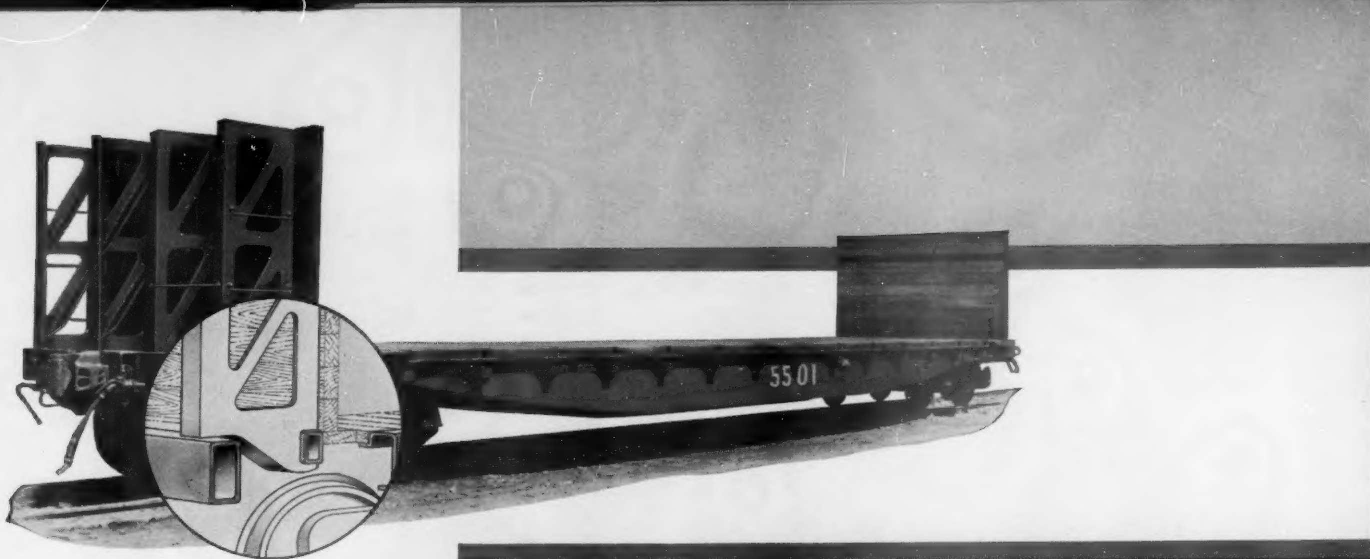
READING.—4% non-cumulative 1st preferred, 50¢, quarterly, payable June 14 to holders of record May 24.

ROCHESTER & GENESSEE VALLEY.—$2, semiannual, payable July 2 to holders of record June 20.

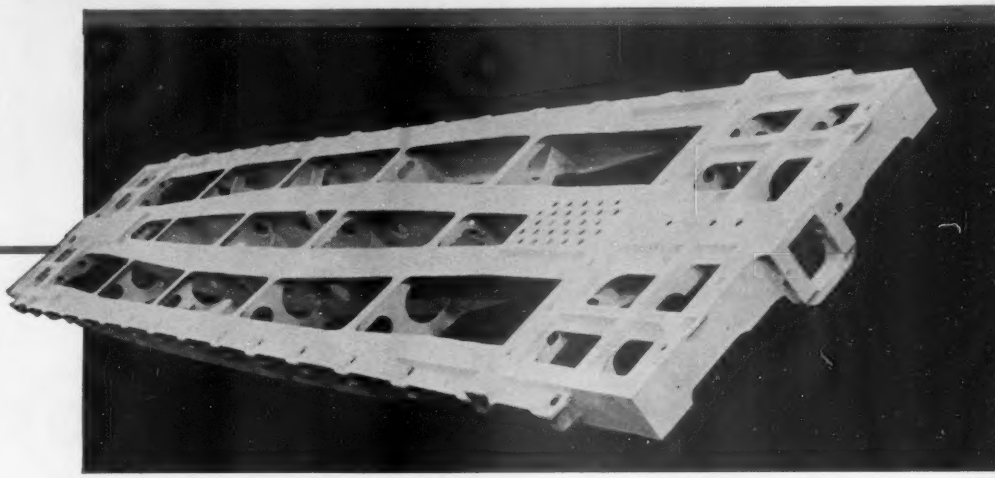
SOUTHERN.—$1, payable June 15 to holders of record May 15.

WEST JERSEY & SEA SHORE.—$1.50, semiannual, payable July 2 to holders of record June 15.

WESTERN PACIFIC.—2% common; as issuance of additional stock for the dividend is subject to approval of the Interstate Commerce Commission, the record date for the stock dividend will not be set until receipt of the approval.



50-ton, 53′ 6″ bulkhead car with Commonwealth one-piece cast steel underframe and interlocking cast steel ends.



Cast steel flat car underframe designed for application of upright ends.

GET *Versatility*

with this Commonwealth Underframe

designed for FLAT CARS
BULKHEAD CARS
PIGGY-BACK CARS

Standard Commonwealth one-piece cast steel flat car underframes are especially designed to provide the *extra strength* required when cars are equipped with end bulkheads. The end construction simplifies application of strong cast steel interlocking ends permitting maximum floor space for lading.

Thousands of flat cars with Commonwealth underframes have been in service for many years, proving their exceptionally long maintenance-free life and the *sound economy* of the investment they represent.

Plan wisely for the future — invest in Commonwealth one-piece underframes

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. EDDYSTONE, PA.

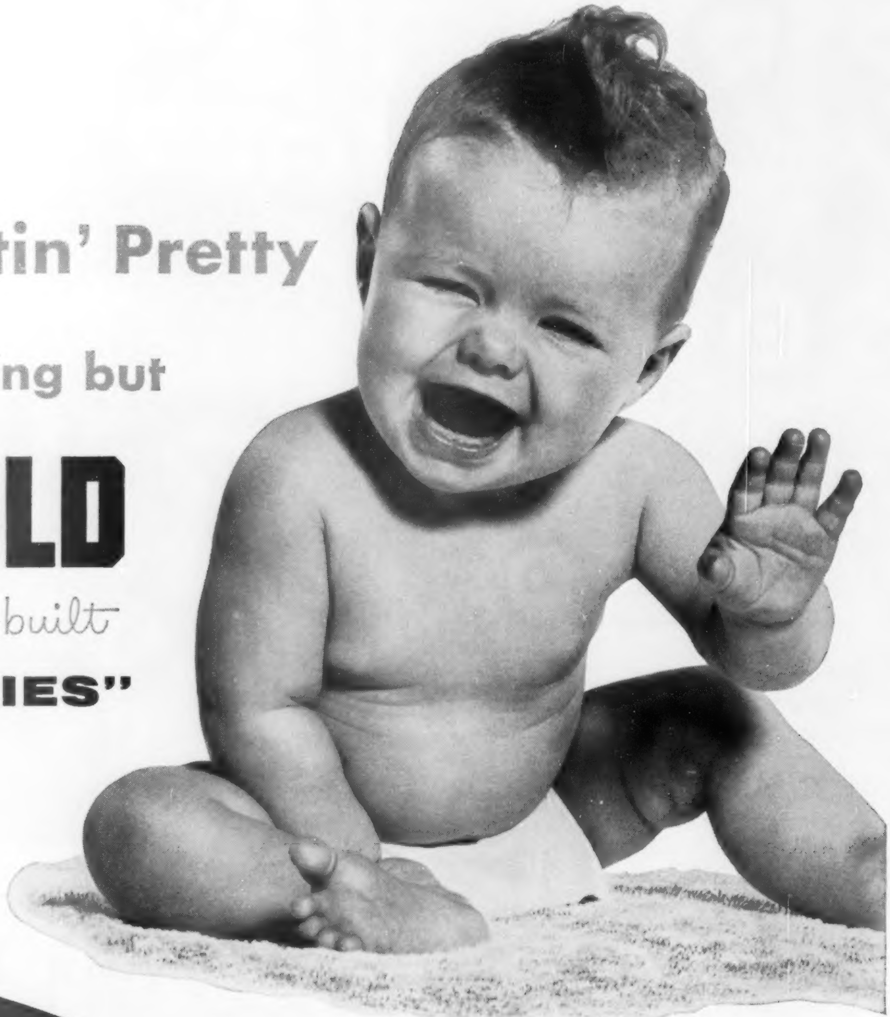
"I'm Sittin' Pretty

use nothing but

GOULD

Research-built

BATTERIES"



There are three big reasons why it pays to choose Gould Research-Built Batteries:

1. They are the finest batteries modern science can give you—research-built for longest service life.

2. Strategically located Gould plants assure prompt attention to your battery requirements.

3. Gould Field Engineering Service, finest in the industry, nation-wide in scope, is as close to you as your telephone, always ready to see that your batteries are properly cared for and maintained . . . that you get maximum battery performance.

America's Finest!
GOULD KATHANODE BATTERIES
for Air Conditioning and Car Lighting

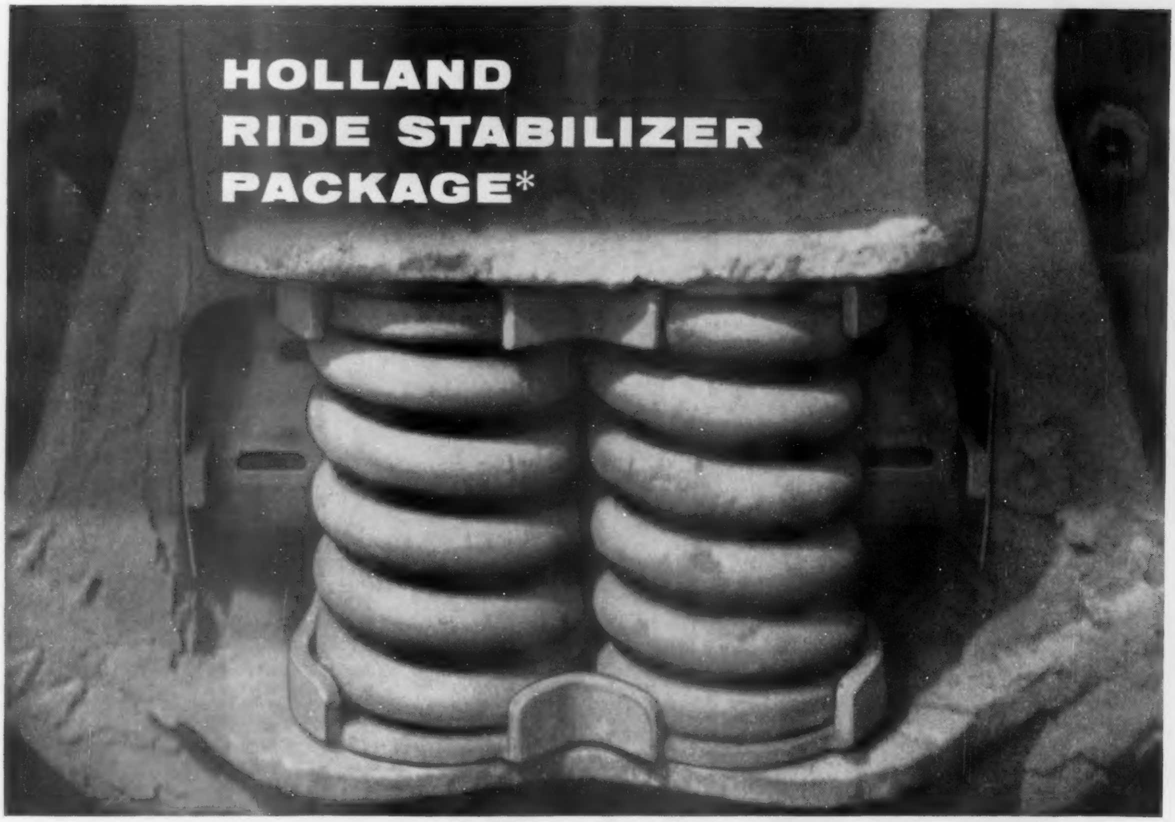
The MATERIAL HANDLING INSTITUTE'S EXPOSITION
Cleveland, Ohio
PUBLIC AUDITORIUM
JUNE 5th THRU 8th
1956
EXHIBITOR
Booth 1425

Always Use Gould-National Automobile and Truck Batteries

GOULD BATTERIES

GOULD-NATIONAL BATTERIES, INC.
Trenton 7, N. J.

"BETTER BATTERIES THROUGH RESEARCH"

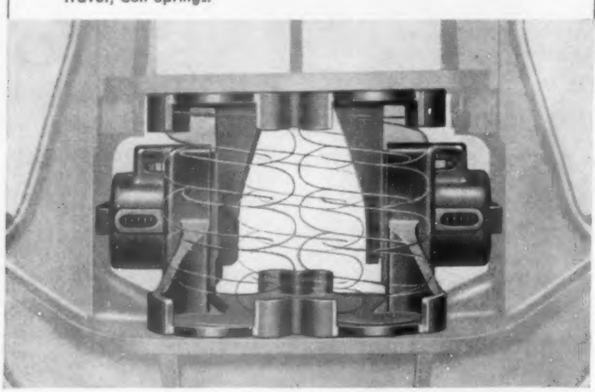


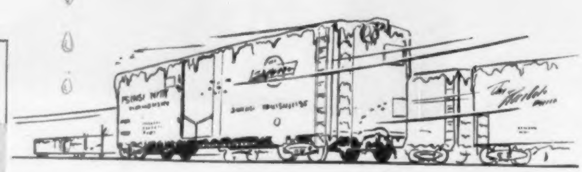
*Pat. Pend.

...PASSES MOST FRIGID TESTS

No special springs required. Uses standard A.A.R. 2½" Travel, Coil Springs.

No welding; no labor. Simply slip in the complete package.





For several months, the Holland Ride Stabilizer Package has been giving a very good account of itself in actual service, under some of the most severe conditions that a freight car can undergo.

Holland Ride Stabilizer Packages are in daily service in refrigerator cars of a major railroad line. Here, these "packages" encounter salt brine dripping and other extremely corrosive conditions far more severe than are met in the usual freight car operation. Full details of the tests and the "package" will be gladly sent on request.

HOLLAND COMPANY

332 s. michigan ave., chicago 4, ill.

FAST FREIGHT TRAIN passes its slower companion — while both keep on schedule — over track protected by CTC.

Perfect timing–for Anaconda control cable

With centralized traffic control — cable plays a vital part in the efficiency, economy and safety of your operation.

It is no wonder, then, that for such important circuits so many railroads turn to Anaconda. For Anaconda Control Cable is made by technicians with years of experience producing a variety of complex cables. And this cable is produced under the industry's strictest quality-control procedures.

In Anaconda's line is a full range of cables with insulations and protective coverings for every type of condition — with high reliability and long life:

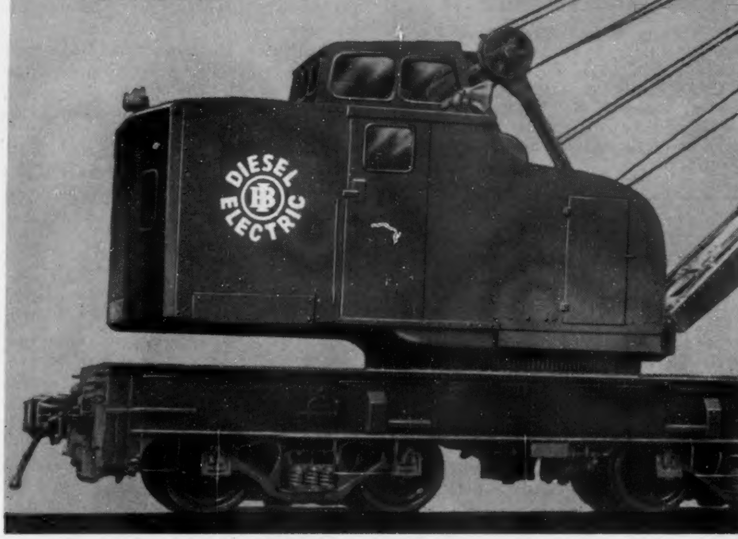
1. *Rubber insulation, neoprene covered, neoprene jacket overall*
2. *Rubber insulation, braid-covered, neoprene jacket overall*
3. *Polyethylene insulation, polyvinyl chloride jacket overall*
4. *Polyvinyl chloride insulation, polyvinyl chloride jacket overall*
5. *Polyethylene insulation, nylon-covered, polyvinyl chloride jacket overall*

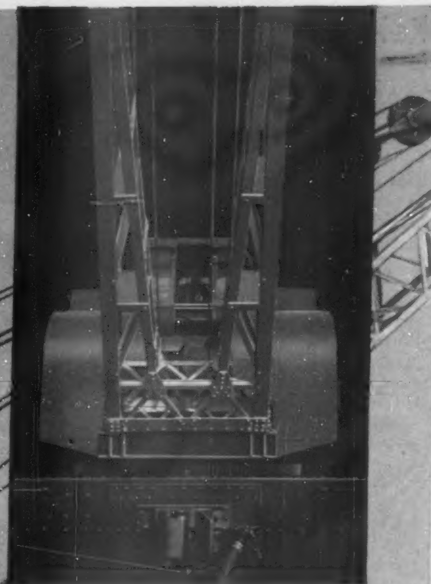
Where special problems are involved, skilled engineers from Anaconda will work with you. Just call the *Man from Anaconda*, or write for more information on cable for main line to roundhouse. Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y. 56344

ASK THE MAN FROM ANACONDA®
FOR RAILROAD CABLE

FASTER and SAFER crane operation

with BROWNHOIST patented monitor type cab and clear vision boom





This view from below shows you the great visibility right through the middle of the Clear Vision Boom.

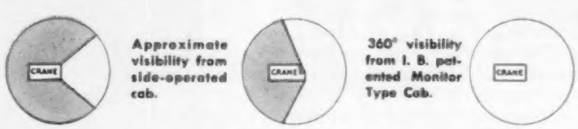
Your operator can see exactly what he's working with in the car in front of him. Greater safety is the result.

Windows on all sides of the raised Monitor Type Cab of a Brownhoist Locomotive Crane give the operator a full view of the area in which he is working, and the open type Clear Vision Boom lets him look right down at the work itself. This complete 360° visibility—to the sides, to the rear, and forward into the car—allows the operator to work more rapidly, without unnecessary crane swinging, and also increases safety by eliminating blind spots. The patented Monitor Type Cab has a door on each side, and all doors and windows can be opened for ventilation. A soundproof partition separates the operator from the engine and controls are placed within convenient reach of his adjustable seat. These factors assure ease of operation of the Brownhoist Locomotive Crane, and Brownhoist engineering assures maximum performance. Anti-friction bearings are used throughout including machinery side frames. The boom hoist is worm driven for smooth, safe operation. Dynamatic clutches disconnect all upperworks when travelling . . . give sure, positive control. High strength alloy steels bulwark the machine for heavy service. Throughout, Brownhoist Locomotive Cranes are designed and built for high capacity production. For further information write today for Catalog No. 548.

Approximate visibility from ordinary cab.

Approximate visibility from side-operated cab.

360° visibility from I. B. patented Monitor Type Cab.



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BROWNHOIST MATERIALS HANDLING EQUIPMENT GIVES A LIFT TO AMERICAN INDUSTRY

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN • DISTRICT OFFICES: New York, Philadelphia, Washington, Cleveland, Chicago, San Francisco, Montreal • AGENCIES: Detroit, Birmingham, Houston

SUBSIDIARY OF Penn-Texas

BROWNHOIST

Railway Officers

AKRON, CANTON & YOUNGSTOWN.—Lester C. Ehrhardt has been appointed general agent at Akron. In addition to his previous work as coal freight agent, Mr. Ehrhardt will assume, until further notice, the former territorial responsibilities of **E. L. Walker,** now on special assignment.

ASHLEY, DREW & NORTHERN.—E. A. Temple, superintendent of the **Port Huron & Detroit** at Port Huron, Mich., elected to newly created post of vice-president—operations of the AD&N at Crossett, Ark. He will be responsible for the transportation, maintenance of way and maintenance of equipment departments of the road. **J. B. White,** superintendent of the AD&N, appointed executive assistant at Crossett.

ATLANTIC COAST LINE.—The following appointments have been made at Wilmington, N. C.: **W. H. Henderson,** from freight traffic manager to assistant vice-president; **C. L. Hinnant,** from freight traffic manager to general freight traffic manager; **E. C. Hicks, Jr.,** and **L. L. Doss,** from assistant freight traffic managers to assistant general freight traffic managers; **G. M. Mann,** from assistant to vice-president, to freight traffic manager; **R. C. McLemore** and **S. G. Williams,** from assistant freight traffic managers to freight traffic managers; **J. G. Middleton,** from general freight agent to assistant freight traffic manager; **J. B. Sharpton,** from passenger traffic manager to general passenger traffic manager; **T. K. Lynch,** from general passenger agent to passenger traffic manager; **H. A. Trulove,** from assistant general passenger agent to general passenger agent; and **H. H. Babb,** from assistant to passenger traffic manager to general passenger agent.

Additional appointments are as follows: **P. L. Harper,** from assistant general freight agent at Jacksonville, Fla., to assistant Florida freight traffic manager at that point; **C. H. Ethridge,** from assistant general freight agent at Orlando, Fla., to assistant freight traffic manager there; **W. T. Quarles,** from division freight agent at Tallahassee, Fla., to assistant general freight agent at Jacksonville. **F. H. Sanders,** from general agent at Montgomery, Ala., to division freight agent at Tallahassee; **R. M. Mock,** from commercial agent at Wilson, N. C., to general agent at Montgomery.

C. C. Crawford and **E. F. Allard,** assistants to auditor freight receipts, have been appointed assistant auditors freight receipts at Wilmington. **E. L. Grant,** personal accountant to auditor freight receipts, has been named assistant to auditor freight receipts.

The firm of Denny, Valentine & Davenport, composed of **Collins Denny, Jr., Charles S. Valentine** and **John S. Davenport, III,** attorneys at law, Travelers Building, Richmond, Va., formerly local counsel, has been appointed division counsel for the state of Virginia, to succeed the late **J. M. Townsend** of Petersburg, Va.

J. H. Arnold, Sr., appointed terminal trainmaster at Atlanta, Ga., succeeding **W. A. Robarts,** named trainmaster, Tampa district at Lakeland, Fla. **C. Patterson** succeeds Mr. Arnold as trainmaster, Columbia district at Florence, S. C.

ATLANTA & WEST POINT—WESTERN OF ALABAMA.—J. Clyde Mixon (above), has been elected president of these roads at Atlanta, Ga., succeeding Samuel R. Young, retired. Mr. Mixon will continue as general manager of these lines and also of the Georgia.

BALTIMORE & OHIO.—T. E. Johnson, superintendent, Newark division, appointed assistant to general manager, Central region at Pittsburgh. **J. A. Curtis,** assistant superintendent, Monongah division, succeeds Mr. Johnson as superintendent, Newark division.

John J. Ekin, Jr., assistant to general superintendent of motive power and equipment at Baltimore, was appointed superintendent of shops at Mt. Clare, succeeding **Charles H. Spence,** retired.

Anthony P. Donadio, B&O general attorney, named chairman, commerce law committee of the Eastern Railroads, succeeding **Guernsey Orcutt** of the Pennsylvania.

BANGOR & AROOSTOOK.—Norman J. Tardif, sales supervisor, has been appointed sales manager—l.c.l, at Presque Isle, Me.

BESSEMER & LAKE ERIE.—M. R. Seipler, assistant superintendent car department at Greenville, Pa., appointed superintendent car department, succeeding **Arnold Myers,** retired. **E. P. Jaxtheimer,** assistant general car foreman, appointed assistant superintendent car department.

Preston H. Taylor, assistant general freight agent at Pittsburgh, appointed general freight agent, and his former position discontinued.

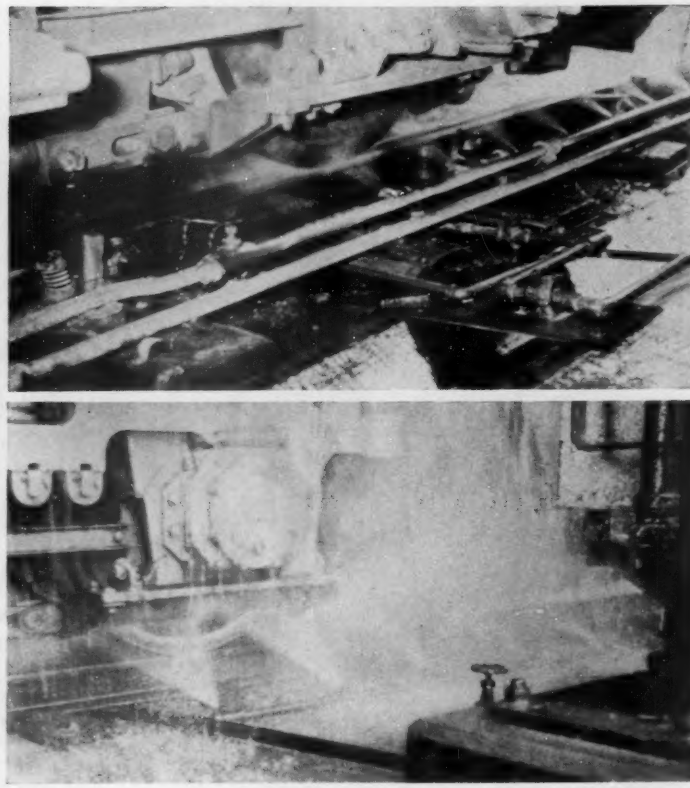
BURLINGTON—W. N. Ernzen, assistant to general auditor at Chicago, has been appointed assistant comptroller there.

E. J. Julis, general agent, freight department at Omaha, Neb., appointed division freight and passenger agent at Scottsbluff, Neb., to succeed *(Continued on page 68)*

CANADIAN NATIONAL. — James A. McDonald, assistant to vice-president, research and development, has been appointed to head a newly formed economic branch of that department, with the rank of assistant vice-president.

Save Money

Clean diesel wheels and trucks with automatic Oakite "track-trip" spray-washing



Oakite automatic "track-trip" wheel cleaning set-up saves money. It prevents solution and rinse water waste. Top picture, cleaning. Bottom picture, rinsing.

YOU ARE LOOKING at a set-up for cleaning and rinsing diesel wheels and trucks. It was designed by Oakite for a big Western Railroad. These pictures were taken at that yard.

THIS ROAD wanted to eliminate costly, time-consuming manual cleaning. They were looking for some simple, inexpensive mechanical method . . . one they could build themselves in their own yard.

HERE'S HOW IT WORKS. Pressure, transferred from wheel flange to track tripper, depresses valves for spray cleaning. Solution spray responds only to wheel pressure. Spraying stops as wheel pressure diminishes.

RESULTS. Considerable savings in solution upkeep and less waste of rinsing water since spraying occurs only as wheels enter spraying area. No time wasted for manual valve adjustments. No hand scrubbing.

If you'd like more information on washing diesel wheels and trucks just drop us a line. We'll be glad to send you complete details, drawings.

Oakite Products Inc., 46 Rector Street, New York 6, New York

OAKITE

RAILWAY DIVISION

Freight Operating Statistics of Large Railways—Selected Items

Region	Road	Year	Miles of road operated	Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl. locos. & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine	1956	1,562	253,187	258,266	10,421	9,916	66.2	646,192	259,080	66	..	2	2.9
		1955	1,564	226,205	232,919	9,804	8,694	64.3	573,272	225,783	73	1	5	6.3
	N. Y., N. H. & Htfd.	1956	1,746	270,606	270,608	17,031	11,681	67.8	716,407	286,695	89	..	15	14.4
		1955	1,746	257,862	257,876	14,850	10,628	67.7	654,646	264,063	83	..	8	8.8
Great Lakes Region	Delaware & Hudson	1956	792	182,888	188,939	7,981	10,176	69.7	710,596	373,186	40	..	2	4.8
		1955	792	171,187	176,556	9,605	8,608	65.5	604,790	304,552	39	..	3	7.1
	Del., Lack. & Western	1956	962	302,671	317,681	27,996	12,762	70.7	824,649	369,093	59	..	2	3.3
		1955	962	260,764	272,086	20,849	11,441	66.9	747,404	321,311	64	..	..	..
	Erie	1956	2,225	566,174	572,304	17,887	32,118	70.4	1,949,440	799,405	162	..	3	1.8
		1955	2,224	497,386	503,626	16,996	28,602	71.7	1,699,226	697,837	159	..	5	3.0
	Grand Trunk Western	1956	951	293,147	298,494	2,433	9,079	61.7	651,057	273,208	54	..	2	28.9
		1955	952	245,255	248,053	2,429	8,377	60.9	597,113	243,484	59	4	14	18.2
	Lehigh Valley	1956	1,137	213,893	217,660	8,635	10,558	68.3	713,415	336,415	34	..	1	2.9
		1955	1,142	184,604	187,890	5,465	9,666	66.3	647,953	292,602	32	..	2	5.9
	New York Central	1956	10,565	2,527,775	2,574,055	99,705	100,694	61.0	7,252,938	3,231,104	607	4	91	13.0
		1955	10,661	2,357,296	2,394,025	97,444	93,200	61.0	6,582,622	2,858,152	546	91	118	15.6
	New York, Chic. & St. L.	1956	2,154	742,298	765,284	7,460	30,948	65.6	2,160,460	976,157	179	1	13	7.7
		1955	2,155	665,164	681,599	6,216	26,496	64.4	1,832,012	808,860	138	23	49	23.3
	Pitts. & Lake Erie	1956	221	70,463	70,735	....	2,960	65.3	254,872	155,126	15	..	..	..
		1955	221	55,615	55,955	56	2,316	61.7	203,895	121,412	10	7	1	5.6
	Wabash	1956	2,381	481,042	483,886	5,946	22,154	67.8	1,428,839	576,319	101	..	2	1.9
		1955	2,381	489,052	489,901	6,261	21,782	66.1	1,394,494	534,376	103	..	..	..
Central Eastern Region	Baltimore & Ohio	1956	5,910	1,634,521	1,828,551	168,867	62,059	62.0	5,125,534	2,446,614	445	1	82	15.5
		1955	6,077	1,356,305	1,480,316	125,560	53,690	62.9	4,070,810	1,923,410	428	38	111	19.2
	Bessemer & Lake Erie	1956	208	39,074	39,352	60	3,606	67.0	169,444	108,565	14	3	..	..
		1955	208	26,175	26,257	27	846	68.0	84,966	53,219	10	5	..	..
	Central RR Co. of New Jersey	1956	613	121,389	122,743	6,287	4,948	67.5	368,193	196,392	61	..	4	6.2
		1955	613	114,942	115,817	5,146	4,291	63.4	326,136	167,377	60	1	7	10.3
	Chicago & Eastern Ill.	1956	868	131,437	131,437	3,131	5,358	64.6	395,485	191,411	28	..	1	3.4
		1955	868	119,719	119,719	2,765	5,286	64.3	372,001	187,249	25	..	3	10.7
	Elgin, Joliet & Eastern	1956	236	91,756	92,613	....	2,922	64.6	238,193	128,602	36	..	4	10.0
		1955	236	73,831	74,014	....	2,472	63.2	198,217	106,760	33	7	3	7.0
	Pennsylvania System	1956	9,892	2,942,483	3,131,020	234,603	124,220	65.1	8,894,224	4,157,943	784	46	389	31.9
		1955	9,892	2,497,941	2,651,869	188,128	106,449	64.1	7,464,204	3,391,266	716	213	425	31.4
	Reading	1956	1,305	378,553	381,746	13,534	15,083	62.3	1,244,125	667,882	163	..	30	15.5
		1955	1,304	313,588	316,265	11,191	11,678	60.1	960,703	496,386	155	13	32	16.0
	Western Maryland	1956	846	174,678	183,835	12,434	7,064	60.2	610,013	339,136	37	..	..	..
		1955	847	149,458	154,733	8,232	5,635	61.7	475,111	264,147	34	..	..	..
Pocahontas Region	Chesapeake & Ohio	1956	5,067	1,558,845	1,588,369	50,739	63,290	56.8	5,559,775	3,076,627	461	1	10	19.2
		1955	5,046	1,262,935	1,283,406	38,989	52,368	57.1	4,446,076	2,439,126	360	44	198	32.9
	Norfolk & Western	1956	2,103	760,703	818,216	73,093	35,910	58.2	3,370,446	1,856,539	226	3	25	9.8
		1955	2,110	613,783	661,133	57,947	29,024	59.2	2,675,723	1,454,845	210	27	28	10.6
Southern Region	Atlantic Coast Line	1956	5,278	877,472	877,472	9,767	28,730	59.3	2,172,081	972,015	231	..	5	2.1
		1955	5,334	803,512	803,512	8,730	25,235	56.8	1,870,271	809,898	238	..	4	1.7
	Central of Georgia	1956	1,731	191,096	191,121	1,580	7,761	69.6	532,357	261,926	74	..	2	2.6
		1955	1,731	176,779	176,803	2,102	7,445	68.6	506,008	242,412	74	..	1	1.3
	Gulf, Mobile & Ohio	1956	2,717	261,653	261,653	107	15,209	69.9	1,024,834	494,925	84	..	7	7.7
		1955	2,717	252,122	252,122	261	14,845	70.1	979,505	469,331	84	..	5	5.6
	Illinois Central	1956	6,531	1,161,830	1,163,890	34,535	49,715	62.8	3,616,482	1,683,435	440	9	137	23.4
		1955	6,539	1,223,205	1,225,009	40,181	47,764	61.9	3,502,860	1,612,441	458	83	172	24.1
	Louisville & Nashville	1956	4,714	881,753	889,562	18,224	32,901	62.4	2,482,850	1,269,083	192	2	23	10.6
		1955	4,715	801,040	808,569	15,977	31,329	62.0	2,351,979	1,186,049	169	45	16	7.0
	Nash., Chatt. & St. Louis	1956	1,043	177,045	181,195	4,561	5,791	69.0	391,448	184,541	49	..	4	7.5
		1955	1,043	162,391	166,327	4,120	5,498	70.4	356,261	166,032	47	..	6	11.3
	Seaboard Air Line	1956	4,051	679,669	679,669	1,977	27,534	62.8	2,009,296	920,690	146	..	9	5.8
		1955	4,053	591,653	591,653	2,314	24,330	62.4	1,746,702	775,018	138	..	9	6.1
	Southern	1956	6,259	891,554	891,614	13,119	43,496	67.6	2,866,517	1,333,764	269	..	3	1.1
		1955	6.264	862,251	862,311	11,962	39,889	66.4	2,604,058	1,170,921	278	..	2	.7
Northwestern Region	Chicago & North Western	1956	7,810	671,109	672,977	8,049	29,089	68.7	1,939,683	872,670	137	12	38	20.3
		1955	7,848	644,764	646,509	8,527	28,238	69.8	1,816,666	861,259	131	34	39	19.1
	Chicago Great Western	1956	1,437	129,352	129,352	175	7,692	72.1	498,535	232,144	27	..	6	18.2
		1955	1,437	122,083	122,083	193	7,171	69.8	471,212	214,609	30	..	3	9.1
	Chic., Milw., St. P. & Pac.	1956	10,633	925,816	940,305	16,651	40,325	66.9	2,745,831	1,261,648	285	7	12	3.9
		1955	10,633	908,641	921,718	18,804	38,074	65.0	2,589,080	1,145,991	276	63	21	5.8
	Chic., St. P., Minn. & Omaha	1956	1,606	163,529	164,929	5,060	5,609	65.1	399,103	178,462	55	1	20	26.3
		1955	1,606	158,255	159,669	4,758	5,243	66.6	360.581	159,608	57	..	13	18.6
	Duluth, Missabe & Iron Range	1956	570	31,761	32,118	457	572	55.2	43,621	19,778	30	25	15	21.4
		1955	569	28,585	28,647	533	523	56.5	39,896	19,229	25	31	12	17.6
	Great Northern	1956	8,272	1,092,128	1,098,302	37,220	40,130	69.0	2,780,833	1,295,411	257	82	57	14.4
		1955	8,288	1,001,414	1,006,786	27,619	35,745	67.1	2,501,601	1,149,045	222	170	40	9.3
	Minneap., St. P. & S. Ste. M.	1956	4,171	390,904	394,274	3,370	13,720	64.8	948,441	433,671	82	11	4	4.1
		1955	4,171	347,435	348,976	1,752	11,461	70.3	741,105	342,661	87	10	24	19.8
	Northern Pacific	1956	6,569	833,798	850,628	26,190	34,114	67.7	2,302,790	1,041,497	251	61	51	14.0
		1955	6,570	790,930	809,697	23,737	30,792	66.7	2,106,141	938,668	273	23	66	18.2
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1956	13,124	2,300,126	2,411,472	62,749	105,140	65.1	7,149,882	2,793,365	528	80	38	5.9
		1955	13,098	2,062,980	2,152,714	46,854	96,529	65.1	6,510,363	2,536,524	506	89	35	5.6
	Chic., Burl. & Quincy	1956	8,771	1,033,654	1,029,050	26,381	47,375	69.0	3,113,778	1,390,714	214	29	47	16.2
		1955	8,824	1,056,460	1,054,345	35,618	43,366	67.9	2,828,374	1,260,024	252	47	43	12.6
	Chic., Rock I. & Pac.	1956	7,580	855,667	854,815	1,048	35,001	63.8	2,462,801	1,018,659	169	..	6	3.4
		1955	7,907	819,839	815,845	1,325	33,544	64.6	2,321,117	966,969	167	..	8	4.6
	Denver & R. G. Wn.	1956	2,155	283,390	302,923	27,804	13,406	69.1	937,728	451,511	71	8	29	26.9
		1955	2,165	258,425	276,036	25,958	12,470	70.1	868,262	419,959	57	45	25	19.7
	Southern Pacific	1956	8,066	1,935,526	2,037,470	149,396	90,531	66.5	6,032,561	2,551,136	606	80	85	11.0
		1955	8,072	1,889,647	1,988,017	201,293	85,466	65.8	5,733,257	2,408,350	582	88	96	12.5
	Union Pacific	1956	9,805	2,115,585	2,164,693	89,882	98,633	68.2	6,539,727	2,854,305	407	88	117	19.1
		1955	9,813	2,054,851	2,096,539	95,260	92,384	67.3	6,085,855	2,601,831	391	242	148	19.0
	Western Pacific	1956	1,190	227,170	240,680	11,832	10,253	69.4	686,903	313,647	45	..	1	2.2
		1955	1.190	197,933	204,276	10,778	8,981	70.7	583,247	267,366	42	2	1	2.2
Southwestern Region	International-Gt. Northern*	1956	1,104	137,228	137,228	....	5,921	65.3	435,928	203,140	42	..	1	2.3
		1955	1,104	121,844	121,844	....	5,337	66.8	381,244	179,209	44	..	..	..
	Kansas City Southern	1956	886	154,466	154,501	512	8,901	67.8	635,692	289,987	28	..	2	6.7
		1955	886	141,515	141,521	180	8,052	67.9	580,113	267,982	24	..	3	11.1
	Mo.-Kans.-Texas Lines	1956	3,230	328,780	328,780	3,359	14,965	66.5	970,962	424,284	86	..	3	3.4
		1955	3,230	323,143	323,143	3,493	13,848	65.4	905,722	392,841	90	..	..	..
	Missouri Pacific*	1956	6,899	935,778	934,242	9,875	43,332	66.9	2,947,586	1,316,066	233	10	38	13.5
		1955	6,896	896,796	896,800	10,001	40,714	66.0	2,764,620	1,203,214	214	39	97	27.7
	Texas & Pacific	1956	1,822	312,579	312,579	6,200	14,983	62.4	1,092,256	422,263	64	..	..	..
		1955	1,822	311,067	311,067	2,962	14,436	62.0	1,036,933	385,479	61	..	1	1.6
	St. Louis-San Francisco	1956	4,573	597,213	600,088	5,638	24,408	66.6	1,644,779	748,850	102	..	6	5.6
		1955	4,564	572,410	572,632	5,306	23,003	65.8	1,540,429	682,539	111	..	8	6.7
	St. Louis Southw. Lines	1956	1,554	333,978	333,994	1,621	16,870	71.6	1,047,272	468,146	54	..	3	5.3
		1955	1,554	276,434	276,442	1,326	14,346	70.5	880,045	393,392	55	5	13	17.8
	Texas & New Orleans	1956	4,302	674,049	674,049	2,900	29,049	66.5	1,974,564	872,244	135	..	7	4.9
		1955	4,302	628,348	628,348	11,754	25,415	62.0	1,777,568	743,919	132	..	4	2.9

For the Month of February 1956 Compared with February 1955

Region	Road	Year	Freight cars on line: Home	Freight cars on line: Foreign	Freight cars on line: Total	Per Cent B.O.	G.t.m. per train-hr. excl. locos and tenders	G.t.m. per train-hr. excl. locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1956	1,623	9,374	10,997	4.0	40,027	2,557	1,025	26.1	822	47.5	5,719	15.7	154.3
		1955	2,572	8,109	10,681	5.1	39,065	2,539	1,000	26.0	770	46.1	5,156	15.4	125.2
	N. Y., N. H. & Htfd.	1956	1,800	18,015	19,815	1.9	43,134	2,647	1,059	24.5	495	29.8	5,662	16.3	115.2
		1955	2,798	15,372	18,170	2.1	43,086	2,539	1,024	24.8	552	32.8	5,401	17.0	131.2
Great Lakes Region	Delaware & Hudson	1956	2,134	6,471	8,605	4.2	67,457	3,902	2,049	36.7	1,592	62.3	16,248	17.4	181.2
		1955	6,629	4,163	10,792	7.2	64,305	3,550	1,788	35.4	991	42.8	13,733	18.2	170.5
	Del., Lack. & Western	1956	3,595	11,832	15,427	2.5	49,098	2,765	1,238	28.9	811	39.6	13,230	18.0	211.2
		1955	7,600	9,889	17,489	3.7	51,842	2,905	1,249	28.1	657	35.0	11,929	18.1	179.3
	Erie	1956	6,957	20,438	27,395	3.2	65,218	3,469	1,423	24.9	1,017	58.1	12,389	18.9	138.8
		1955	10,254	15,730	25,984	5.5	66,432	3,446	1,415	24.4	959	54.8	11,206	19.4	127.3
	Grand Trunk Western	1956	3,702	10,602	14,304	7.3	46,691	2,249	944	30.1	659	35.5	9,906	21.0	150.9
		1955	3,524	8,998	12,522	6.6	51,418	2,454	1,001	29.1	694	39.2	9,134	21.1	124.8
	Lehigh Valley	1956	7,644	8,437	16,081	4.6	69,439	3,369	1,589	31.9	724	33.2	10,203	20.8	241.3
		1955	9,843	6,934	16,777	3.7	69,396	3,524	1,592	30.3	625	31.1	9,151	19.8	216.8
	New York Central	1956	50,573	99,655	150,228	3.1	48,961	2,918	1,300	32.1	733	37.4	10,546	17.1	146.8
		1955	74,192	80,626	154,818	7.9	49,379	2,830	1,229	30.7	644	35.5	9,575	17.7	132.2
	New York, Chic. & St. L.	1956	7,168	19,060	26,228	5.4	50,756	2,975	1,344	31.5	1,300	62.8	15,627	17.4	150.3
		1955	8,177	14,401	22,578	9.1	49,396	2,806	1,239	30.5	1,260	64.1	13,405	17.9	128.5
	Pitts. & Lake Erie	1956	3,299	9,406	12,705	3.5	56,840	3,630	2,209	52.4	431	12.6	24,204	15.7	177.1
		1955	9,898	5,225	15,123	10.6	54,929	3,689	2,197	52.4	285	8.8	19,621	15.0	111.0
	Wabash	1956	8,837	10,408	19,245	4.4	65,882	2,981	1,202	26.0	1,058	60.0	8,346	22.2	172.2
		1955	8,469	10,206	18,675	7.4	64,050	2,865	1,098	24.0	1,002	61.8	8,015	22.5	182.4
Central Eastern Region	Baltimore & Ohio	1956	44,022	49,844	93,866	5.4	48,321	3,185	1,520	39.4	905	37.0	14,275	15.4	137.1
		1955	56,404	39,370	95,774	15.5	47,293	3,040	1,436	35.8	719	31.9	11,304	15.8	105.1
	Bessemer & Lake Erie	1956	4,973	1,359	6,332	15.8	71,285	4,537	2,907	67.6	675	14.9	17,998	16.4	95.1
		1955	7,208	825	8,033	17.3	45,977	3,462	2,168	62.9	250	5.9	9,138	14.2	79.8
	Central RR Co. of New Jersey	1956	2,355	11,061	13,416	6.6	44,629	3,158	1,684	39.7	506	18.9	11,048	14.7	95.2
		1955	5,581	8,933	14,514	11.7	41,530	2,957	1,518	39.0	408	16.5	9,752	14.6	86.1
	Chicago & Eastern Ill.	1956	2,539	3,322	5,861	8.5	56,289	3,017	1,460	35.7	1,116	48.3	7,604	18.7	162.0
		1955	2,834	3,095	5,929	8.5	52,759	3,115	1,568	35.4	1,167	51.3	7,704	17.0	166.9
	Elgin, Joliet & Eastern	1956	6,738	12,212	18,949	5.0	20,028	2,754	1,487	44.0	242	8.5	18,790	7.7	106.6
		1955	7,775	8,018	15,793	9.1	23,328	2,792	1,504	43.2	250	9.1	16,156	8.7	84.1
	Pennsylvania System	1956	97,016	94,848	191,864	7.8	52,590	3,100	1,449	33.5	746	34.2	14,494	17.4	103.5
		1955	16,959	86,269	203,228	14.6	52,290	3,062	1,391	31.9	595	29.1	12,244	17.5	81.9
	Reading	1956	10,902	22,592	33,494	3.6	49,561	3,287	1,764	44.3	665	24.1	17,648	15.1	83.6
		1955	18,951	14,117	33,068	5.8	46,557	3,064	1,583	42.5	526	20.6	13,595	15.2	69.5
	Western Maryland	1956	4,674	6,511	11,185	2.4	45,173	3,549	1,973	48.0	1,057	36.5	13,823	12.9	206.0
		1955	7.590	2,742	10,332	3.6	46,298	3,219	1,789	46.9	903	31.2	11,138	14.6	188.3
Poca-hontas Region	Chesapeake & Ohio	1956	46,816	32,916	79,732	1.4	66,687	3,395	1,989	48.6	1,368	49.5	20,938	18.7	106.7
		1955	54,796	28,811	83,607	4.5	64,756	3,538	1,941	46.6	1,057	39.6	17,264	18.4	85.1
	Norfolk & Western	1956	33,113	10,309	43,422	2.0	73,826	4,552	2,507	51.7	1,464	48.6	30,442	16.7	130.1
		1955	36,390	8,145	44,535	2.4	74,194	4,504	2,449	50.1	1,166	39.3	24,625	17.0	104.0
Southern Region	Atlantic Coast Line	1956	17,737	19,920	37,657	4.3	45,631	2,484	1,112	33.8	894	44.5	6,350	18.4	143.5
		1955	21,065	16,631	37,696	3.6	41,588	2,334	1,011	32.1	782	42.9	5,423	17.9	132.7
	Central of Georgia	1956	2,321	7,351	9,672	3.4	48,374	2,790	1,373	33.7	951	40.5	5,218	17.4	95.3
		1955	3,326	6,320	9,646	4.6	49,560	2,872	1,376	32.6	923	41.5	5,002	17.3	95.3
	Gulf, Mobile & Ohio	1956	4,806	9,383	14,189	5.3	75,824	3,921	1,893	32.5	1,127	49.6	6,281	19.4	107.3
		1955	5,879	8,835	14,714	3.1	77,199	3,890	1,864	31.6	1,128	50.9	6,169	19.9	109.2
	Illinois Central	1956	24,235	28,509	52,744	2.2	51,568	3,156	1,469	33.9	1,120	52.6	8,888	16.6	73.6
		1955	28,551	22,060	50,611	2.7	47,884	2,900	1,335	33.8	1,144	54.7	8,807	16.7	69.5
	Louisville & Nashville	1956	28,914	15,340	44,254	2.7	48,634	2,823	1,443	38.6	1,011	42.0	9,283	17.3	155.9
		1955	34,022	12,303	46,325	5.5	50,882	2,944	1,485	37.9	905	38.5	8,984	17.3	137.9
	Nash., Chatt. & St. Louis	1956	3,374	3,583	6,957	4.7	44,352	2,214	1,044	31.9	947	43.0	6,101	20.1	131.9
		1955	3,994	2,823	6,817	3.6	43,288	2,200	1,025	30.2	860	40.5	5,685	19.7	122.7
	Seaboard Air Line	1956	11,947	19,337	31,284	2.6	54,447	3,019	1,383	33.4	1,042	49.6	7,837	18.4	182.0
		1955	13,832	14,061	27,893	2.7	54,384	3,001	1,331	31.9	1,001	50.4	6,829	18.4	169.4
	Southern	1956	15,142	26,400	41,542	2.8	54,566	3,227	1,501	30.7	1,119	54.0	7,348	17.0	122.9
		1955	19,955	23,457	43,412	4.9	51,865	3,031	1,363	29.4	985	50.5	6,676	17.2	123.2
Northwestern Region	Chicago & North Western	1956	15,170	30,841	46,011	5.3	53,027	2,932	1,319	30.0	659	32.0	3,853	18.3	139.8
		1955	17,421	28,016	45,437	4.9	51,576	2,881	1,366	30.5	674	31.7	3,919	18.3	120.1
	Chicago Great Western	1956	1,177	3,764	4,941	4.0	73,726	3,858	1,796	30.2	1,524	70.0	5,571	19.1	140.6
		1955	2,045	4,289	6,334	3.2	73,340	3,865	1,761	29.9	1,260	60.3	5,334	19.0	138.0
	Chic., Milw., St. P. & Pac.	1956	28,800	33,042	61,842	6.3	56,492	2,973	1,366	31.3	702	33.5	4,092	19.0	120.0
		1955	35,669	30,622	66,291	6.6	54,305	2,863	1,267	30.1	621	31.8	3,849	19.1	102.9
	Chic., St. P., Minn. & Omaha	1956	1,162	8,468	9,630	4.6	35,347	2,472	1,105	31.8	646	31.2	3,832	14.5	84.6
		1955	1,139	8,071	9,210	4.5	33,200	2,307	1,021	30.4	636	31.4	3,549	14.6	87.1
	Duluth, Missabe & Iron Range	1956	13,736	935	14,671	2.2	20,762	1,467	665	34.6	47	2.5	1,196	15.1	19.9
		1955	14,593	620	15,213	1.6	21,438	1,500	723	36.8	45	2.2	1,207	15.4	18.3
	Great Northern	1956	21,262	21,712	42,974	3.0	51,486	2,572	1,198	32.3	1,040	46.7	5,400	20.2	107.1
		1955	22,938	21,622	44,560	4.3	50,120	2,518	1,156	32.1	943	43.8	4,951	20.1	91.0
	Minneap., St. P. & S. Ste. M.	1956	5,217	9,867	15,084	6.0	48,385	2,451	1,121	31.6	1,001	48.9	3,585	19.9	159.9
		1955	6,227	7,135	13,362	6.6	44,532	2,155	996	29.9	865	41.1	2,934	20.9	111.8
	Northern Pacific	1956	18,915	20,514	39,429	7.4	54,125	2,768	1,252	30.5	927	44.8	5,467	19.6	92.3
		1955	19,433	17,155	36,588	5.8	52,998	2,675	1,192	30.5	901	44.4	5,103	19.9	89.5
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1956	49,191	33,785	82,976	3.3	74,133	3,116	1,217	26.6	1,170	67.6	7,339	23.8	140.2
		1955	55,225	29,951	85,176	4.0	74,605	3,165	1,233	26.3	1,044	61.1	6,916	23.6	131.8
	Chic., Burl. & Quincy	1956	16,333	22,701	39,034	4.4	64,422	3,016	1,347	29.4	1,160	57.3	5,468	21.4	134.3
		1955	23,381	20,711	44,092	2.9	56,805	2,683	1,195	29.1	1,011	51.2	5,100	21.2	120.9
	Chic., Rock I. & Pac.	1956	11,893	19,766	31,659	4.9	58,746	2,884	1,193	29.1	1,122	60.4	4,634	20.4	176.3
		1955	13,605	17,610	31,215	5.5	56,939	2,841	1,184	28.8	1,103	59.2	4,368	20.1	175.2
	Denver & R. G. Wn.	1956	7,545	6,318	13,863	3.5	62,670	3,317	1,597	33.7	1,100	47.3	7,225	18.9	115.9
		1955	7,770	5,542	13,312	3.9	63,815	3,365	1,628	33.7	1,098	46.5	6,928	19.0	90.5
	Southern Pacific	1956	29,991	40,134	70,125	2.0	60,955	3,149	1,332	28.2	1,252	66.8	10,906	19.6	106.7
		1955	31,457	37,098	68,555	2.3	58,836	3,065	1,287	28.2	1,221	65.9	10,656	19.4	110.0
	Union Pacific	1956	27,839	33,945	61,784	1.9	78,048	3,118	1,361	28.9	1,594	80.6	10,038	25.2	130.3
		1955	31,372	32,590	63,962	2.8	81,066	2,981	1,275	28.2	1,448	76.4	9,469	27.4	103.6
	Western Pacific	1956	2,150	4,155	6,305	1.1	75,277	3,054	1,394	30.6	1,564	73.6	9,089	24.9	200.5
		1955	2,484	2,900	5,384	2.7	74,508	2,964	1,359	29.8	1,767	84.0	8,024	25.3	183.0
Southwestern Region	International-Gt. Northern*	1956	894	6,667	7,561	3.4	67,149	3,182	1,483	34.3	917	40.9	6,345	21.1	116.5
		1955	988	5,545	6,533	4.0	66,570	3,140	1,476	33.6	901	43.7	5,797	21.3	105.6
	Kansas City Southern	1956	1,161	6,249	7,410	1.4	87,766	4,142	1,890	32.6	1,372	62.2	11,286	21.3	218.8
		1955	1,445	6,034	7,479	3.9	87,013	4,116	1,901	33.3	1,322	58.5	10,802	21.2	201.2
	Mo.-Kans.-Texas Lines	1956	4,082	7,821	11,903	6.9	62,213	2,965	1,296	28.4	1,225	65.0	4,530	21.1	139.3
		1955	5,181	7,070	12,251	8.2	60,571	2,813	1,220	28.4	1,191	64.2	4,344	21.6	143.5
	Missouri Pacific*	1956	15,066	19,739	34,805	3.1	73,116	3,184	1,422	30.4	1,314	64.7	6,578	23.2	124.8
		1955	20,579	17,846	38,425	0.9	71,249	3,094	1,347	29.6	1,120	57.4	6,231	23.1	100.5
	Texas & Pacific	1956	2,698	6,736	9,434	2.2	77,273	3,505	1,355	28.2	1,542	87.6	7,992	22.1	184.8
		1955	3,409	5,857	9,266	2.3	74,541	3,342	1,242	26.7	1,465	88.5	7,556	22.4	194.6
	St. Louis-San Francisco	1956	12,997	11,989	24,986	2.9	56,411	2,763	1,258	30.7	1,022	50.0	5,647	20.5	209.9
		1955	14,106	10,864	24,970	3.0	53,532	2,699	1,196	29.7	968	49.6	5.341	19.9	192.3
	St. Louis Southw. Lines	1956	1,884	5,050	6,934	1.2	68,040	3,145	1,406	27.8	2,337	117.6	10.388	21.7	216.5
		1955	2,297	5,122	7,419	1.5	65,813	3,189	1,426	27.4	1,955	101.1	9,041	20.7	147.8
	Texas & New Orleans	1956	5,178	16,747	21,925	1.4	60,579	2,949	1,303	30.0	1,355	67.8	6,991	20.7	178.0
		1955	6,772	15.324	22,096	2.4	60,523	2,846	1,191	29.3	1,213	66.8	6,176	21.4	177.4

* Report of trustee or trustees.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to to revision.

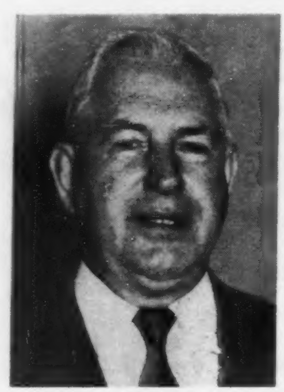
(Continued from page 62)
George F. Jones, executive general agent, retired. **Robert B. Schmidt,** chief clerk to freight traffic manager, Lines West at Omaha, has become general agent, freight department there. **C. C. Tackett,** commercial agent at Vancouver, B. C., named general agent at Butte, Mont.

COTTON BELT.—E. P. Becker, assistant traffic manager at Chicago, appointed Eastern traffic manager at New York, succeeding **C. E. Scott,** retired. **Harold J. Breitenbach,** general agent at Atlanta, Ga., succeeds Mr. Becker, and in turn has been replaced by **C. S. Mayne,** transferred from Winston-Salem, N. C. **Joe B. Carter,** commercial agent at Winston-Salem, replaces Mr. Mayne.

E. P. Becker

DURHAM & SOUTHERN.—W. J. Kerr, Jr., general freight agent at Durham, N. C., appointed traffic manager there.

FLORIDA EAST COAST.—C. D. Lane, Jr., chief accounting officer at St. Augustine, Fla., resigned April 30 to engage in business at Portsmouth, Va., but will continue to serve the FEC in a consulting capacity. To succeed him, **J. V. Jaka-**
(Continued on page 74)



J. V. Jakadofsky

Federal
MAIN LINE CONTROL
gives DT & I the greatest flexibility of train operations known to the railroad industry!

Initial 240-mile section integrates fixed-mobile radio and carrier—through 8 wayside radio stations

A new era of communications efficiency has been inaugurated by the Detroit, Toledo and Ironton ... featuring Federal's Main Line Control System ... designed to move trains *faster than ever* with such advanced facilities as:

- **Dispatcher has instantaneous, selective, normal-voice-level communication to trains ... through locally or remotely controlled wayside stations ... presently up to 240 miles from Dearborn.**
- **Radio-equipped locomotives have two-way communication with dispatcher through any one of these wayside stations.**
- **Dispatcher can place one or as many fixed stations as he may desire under his control.**
- **Train radio call-in tone generators eliminate interruption of dispatcher's conversation.**
- **Dispatcher can answer incoming calls without knowing which station called in.**
- **Maximum reliability of dispatching circuits is assured by radio bridge to span wire breaks.**

Federal Main Line Control is a development of IT&T engineers. Versatile and highly flexible, it can be readily adapted to specific requirements either on a large or small scale. For full information, write to Dept. P-847

Dispatcher's Station Control Equipment

Federal Telephone and Radio Company
A Division of INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
RAILROAD DIVISION • 100 KINGSLAND ROAD • CLIFTON, NEW JERSEY
In Canada: Standard Telephones and Cables Mfg. Co. (Canada) Ltd, Montreal, P.Q.

Federal
FEDERAL TELEPHONE & RADIO FTR
A DIVISION OF IT&T

Train Radio • Sequence Switch Interlocking • Carrier Telephone and Telegraph • Microwave, Dial Telephone, Train Describing, Train Dispatching and Remote Control Systems • Automatic Classification Yards • Closed Circuit TV • Selenium Rectifiers • Battery Chargers • Wire and Cable

See Federal's Exhibit—AAR Communications Section Meeting—Cincinnati


One of the 160 Uses of CONCRETE on Railroads
NO. 31 OF A SERIES
This is the reinforced concrete frame, with a pan type floor system, of the new offices for The Kansas City Southern Railway Company in its yards 12 miles north of the city of Shreveport, La.
Reinforced concrete building frames are just one of more than 160 uses for portland cement and concrete which enable American railroads to improve service and save time and money. The moderate first cost of such concrete improvements—plus their long life and low maintenance cost—result in *low annual cost.* This saves money for other items.
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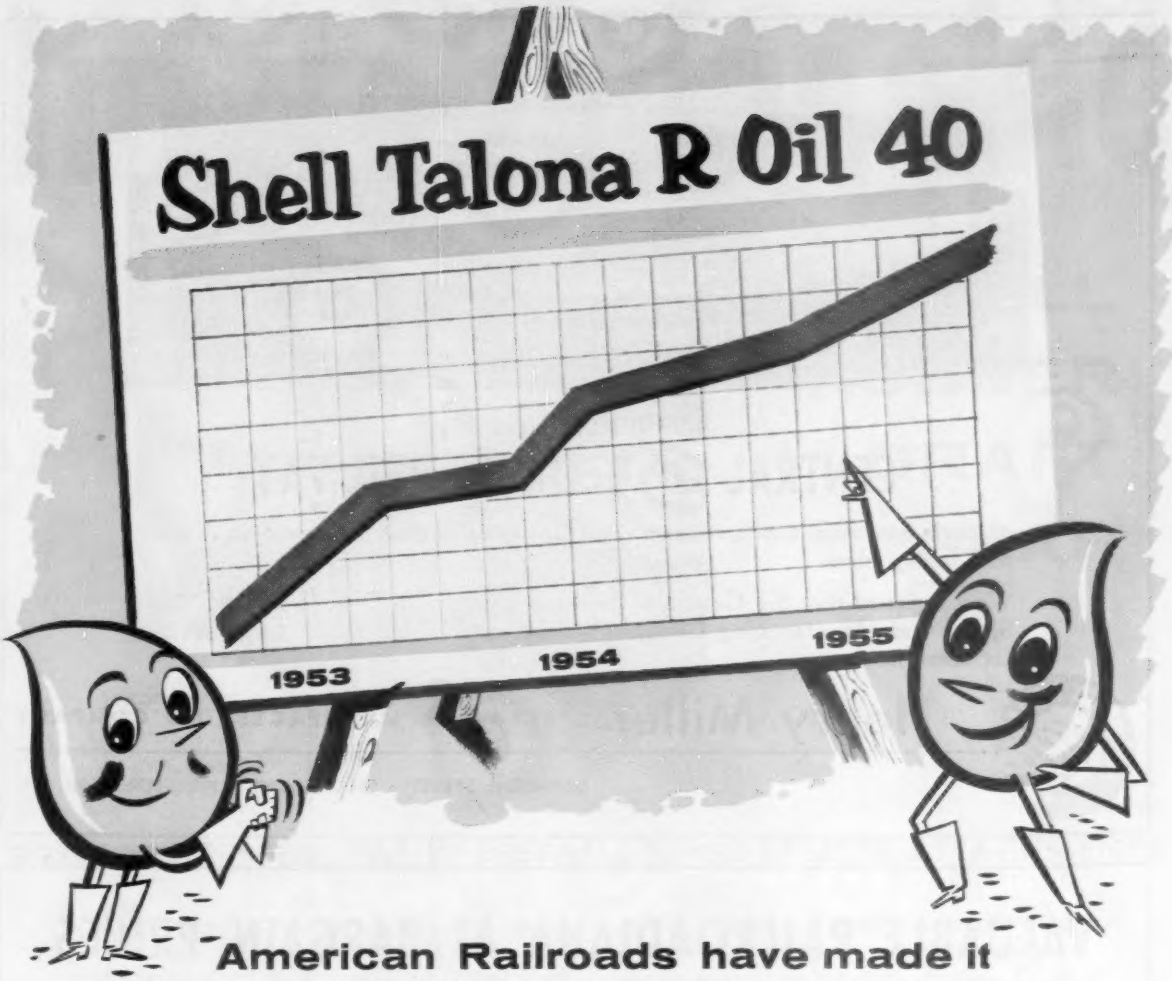
A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work


Shell Talona R Oil 40
1953
1954
1955

(Continued from page 68)
dofsky, assistant chief accounting officer, has been appointed to the newly created position of auditor of the road. **E. L. Masters,** traveling auditor of disbursements, named assistant auditor.

FRISCO.—P. E. Odom appointed trainmaster at Tulsa, Okla.

LONG ISLAND.—R. P. Turnbull appointed mechanical engineer at Morris Park Shops, Richmond Hill, N. Y., with jurisdiction over mechanical engineering and test activities.

LOUISVILLE & NASHVILLE.—S. Kindred Johnson has been appointed district freight agent at Indianapolis, Ind., succeeding **Walter H. Lashley,** retired. **Theo C. Black** has been appointed general eastern passenger agent at New York, succeeding **J. E. Cornell,** retired. **John J. Houlihan** succeeds Mr. Black as district passenger agent at New York.

MISSOURI PACIFIC.—R. F. Hickerson appointed trainmaster, Kansas City Terminal division at Kansas City, Mo., and **M. G. Jackson** named trainmaster, Wichita division at Wichita, Kan.

E. D. Graham, auditor of the former International-Great Northern at Palestine, Tex., retired April 30.

NEW YORK, ONTARIO & WESTERN.—R. J. Roseberry appointed general agent at Kansas City.

NORFOLK SOUTHERN.—Henry Oetjen, partner in the brokerage firm of McGinnis & Co., has been elected NS chairman and president. **Henry G. Bruns,** partner in the brokerage firm of T. L. Watson, has been elected chairman of the road's executive committee. Mr. Oetjen succeeds **J. R. Pritchard** as president. **E. Elwood McClure,** chairman, resigned in March.

NORTHERN PACIFIC.—L. H. Ball, assistant statistician, appointed statistician, succeeding **C. G. Gregory,** retired.

OBITUARY

Edward N. Brown, 94, former chairman of the **Frisco** and the **Rock Island,** died May 2 at his home in New York.

Wallace D. O'Brien, general freight traffic manager (rates and divisions) of the **Great Northern** at St. Paul, died April 20.

Edward G. Smith, 69, who retired in 1952 as vice-president, secretary and treasurer of the **Union Pacific,** died May 2 in Savannah, Ga., while on a trip through the south.

L. L. Adams, chief engineer of the **Louisville & Nashville** at Louisville, Ky., died May 3.

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